THE

SOUTHERN AGRICULTURIST.

SEPTEMBER, 1834.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XLIV.—*Anniversary Address, delivered before the Horticultural Society of Charleston, July* 10, 1834; *by* HENRY R. FROST, M. D.

(Concluded from page 399.)

THE pleasures we experience in the pursuit of gardening, are very much increased by a knowledge of botany. The present subject seems favourable to enforce the study from several considerations.

Are there any of my audience designed for the profession of medicine? To them, I would observe, that the most valuable of our remedies are derived from the vegetable kingdom; and that these substances are influenced in their effects by circumstances connected with their growth, age, season, at which they are gathered, &c. It is, therefore, important that you should be acquainted with the organization of the vegetable world—know the laws which regulate its increase, maturity and decline—the changes to which plants are subjected at different stages of their growth. Without this knowledge, we cannot be certain, that the substance we are employing is in a state to furnish all the benefits which may be afforded.

A knowledge of this science is further necessary, properly to discriminate one plant from another. Common names are often so fancifully and arbitrarily applied—often

too, the same name, or slight variety, designating plants totally different in their classification, properties, habits, that a degree of knowledge more than is commonly possessed, is required to distinguish one from another, to show the fallacies which have determined its title or its appellation—and to establish a correct estimate of the value which should be attached to its reputed properties.

Furthermore, the common people in the discussions upon the names and properties of plants, are apt to appeal to physicians as umpires in their disputes. When the information sought after can be furnished, and that determined by a scientific acquaintance with the subject, the effect is uniformly favourable to the attainments of the physician, and proportionately raises his character.

The knowledge of botany furnishes the mind, particularly when the country is the scene of labour, with a source of much and ever varying amusement. The faculties of the mind, which are called into exercise in the pursuit of this study, are such, as conduce to its improvement as well as to its gratification. With the exercise of memory in treasuring up the names and localities of plants, the powers of observation become enlarged, and the perceptions are also awakened. The mind passes with rapidity from one object to another—dwells upon its prominent beauties, or dives into a minute analysis of its structure—derives pleasure in the order, regularity, fitness of parts, which are so conspicuous in all, even the most insignificant of nature's works. An amusement so rational, while it purifies and elevates the feelings, fills up much of the vacant hours of life, which often, from no other cause than the absence of occupation or a pursuit, are spent in unprofitable amusements, sensual indulgencies, or vicious and degrading excesses. Once a botanist, his pleasures are not confined to his immediate climate—the productions of other countries invite and captivate him; wherever chance or inclination lead, he is at home; to him all nature smiles, and myriads of objects court his acquaintance, and seemed formed for his pleasure.

An improved mind, derives from an acquaintance with botany, much and rich food for philosophical reflection.

"Take the phenomena of vegetation, and what a secret 'world of wonders is there in every plant. Growth, vege-'table growth, which to the ignorant is a bare and naked

'fact, is to the scientific eye, a history, a whole history of 'things the most interesting to every intelligent mind. 'Survey it in the dark and senseless earth, until it rises 'up to the stately plant, or towering forest tree—trace 'the firm and tough fibres which give it strength to resist 'the storms amidst which it flourishes—observe the ducts 'and channels carefully laid in it, to convey streams from 'the rich fountains of life below—mark its numerous cells, 'those secret laboratories of nature. Survey all this ex-'quisite and wonderful workmanship, and who, I ask, 'would not know something of all this—who would not 'give a little time to procure so great satisfaction? Who 'would be content to pass one spring season and not know 'something of these most curious and wonderful processes 'that are going on around him."*

The peculiarities of the vegetable kingdom are deserving of a high degree of consideration. Time will allow me only to speak of the most important, and of these, the most remarkable, is the circulation of the sap. This operation is allied to the circulation of the blood in the animal system, and of the intimate connexion between this function, and the vital actions, you need not be informed in this enlightened day.

The circulation of the sap is as wonderful in its results as it is curious in its course. It consists in a great degree of water holding in solution a variety of substances, as lime, magnesia, soda, pot-ash; forming a very heterogenious compound. In this state it is unfit for the purposes of nutrition, but must be elaborated or perfected by chemical operations before it is adapted to the wants of the plant. It is taken up by the roots, circulates through the stem, and is then distributed through all parts of the plant. The roots are to the plant what the stomach is to animals. The slightest observation would satisfy us that such is the fact. If we take a plant with its roots, or a branch, after it has begun to wither, and place it in water, it will, by absorbing water, begin to revive, and continue in vigour for a longer or shorter period according as the circumstances in which it is placed, are more or less favourable. Arrived in the stem, the fluid or sap circulates through what is called the alburnun or white wood, also the soft

* North American Review.

wood, and the sappy part of the wood. That this fluid, after being taken up, circulates through the the stem, is proved by this circumstance—that if we take a branch of the vine just before the leaf buds open, and wound it, it bleeds, or the sap runs out very abundantly, insomuch, that the operation would be fatal to the branch if it was not stopped. The quantity which would be yielded by a branch of the vine, is about a pint in twenty-four hours, and its ordinary progress is about eight inches in six minutes.

From the stem it passes into the branches and leaves, in which last it is distributed through a very fine net-work of vessels, and exposed to the action of light, heat, and air. From the combined action of these powerful agents, it is much altered in its properties. It becomes charged with those principles which are applied to the increase of the plant, and adapted to the various secretions which often characterize them. There originate the acid or alkaline, mucilaginous or resinous, acrid or aromatic, saccharine or bitter principles. The sap having undergone these changes, assumes the name of chyle, or returning sap; enters another system of vessels, which, running downwards, passes between the inner layer of bark and the alburnun, or soft wood. In its course it traverses the different organs, and deposits in each the various matters requisite for their subsistence. This operation in the vegetable system is very closely allied in many particulars, to what occurs in the animal. In the lungs, the blood is exposed to the air, as the sap in the leaves, in both it undergoes very important changes, and in both becomes fitted to repair the wastes of the system, and of furnishing the different organs with the means of continuing their functions. The most material difference in the system of the two orders is, that in the lungs of animals the blood parts with its carvonaceous matter as unfriendly to life, while it is absorbed by the juices circulating in the leaves to become an integral part of the tree or plant. From the chyle or returning sap, various substances are derived, which are in familiar use every day, and these substances are secreted by peculiar glands; some of them are designated to remain in the plant, while others are separated and conveyed out as useless and detrimental.

Upon many of these substances I might enlarge, but shall occupy too much of your time. To illustrate the nature of these secretions, I shall enumerate a few. *Gum Arabic*, which is in such common use, is secreted from the sap of the genus Acacia, a tree growing in Arabia. It exudes, in a liquid state, from the bark of the trunk and branches of the tree, in a similar manner to the gum procured from the cherry tree of this country. In a little time it becomes hardened and is collected.

India Rubber, or gum elastic, is furnished from the milky secretion of several trees, which is procured by making incisions into the trunk. As it exudes it is collected on the surface of moulds of clay of various shapes. It hardens and becomes black upon exposure to the air, and when obtained in sufficient quantity, the moulds are beaten to pulverize the clay, which is then shaken out.

The most extraordinary production from the sap is afforded by the tree called the Cow-tree, *(Bassia butyracea)* from the circumstance of a milky fluid flowing from it. It is described by Humboldt, who informs us that it grows in rocky and unfruitful districts, little cultivated for any purposes. For many months of the year it is not moistened by a single shower. The branches appear dead and dry, but when the trunk is pierced, there flows from it a sweet and nourishing milk. At sun-rise the vegetable fountain is most abundant; and at this time, the natives are seen hastening from all quarters, furnished with large bowls to receive the milk. From this substance butter has been made.*

A plant no less singular has been discovered, which furnishes a wholesome and limpid water. It has recently been found in the countries lately added to the British empire in India. The fluid flows from the stem of the plant when cut, and the natives are said to be well acquainted with this remarkable property.†

From the returning sap is also furnished the volatile oils, which give fragrance to many plants, as mint, sage, rosemary, lavender, &c. In these, the volatile oil is contained in vesicular glands, which abound in all parts of the plant. These glands break spontaneously, or are otherwise ruptured; when the volatile oil, which they contained, is diffused into the air, and gives to it an aromatic smell.

* Blake's Botany. † Silliman's Journal, vol. 22.

From the juices of the Bamboo and Teak-tree, a substance resembling flint or silex is secreted, and is to be found in the varieties of the cane; in some of the grasses it is distributed on the surface.

Such are a few of the many examples which might be adduced of changes in the composition of the sap, in its progress through the vegetable system. These examples might be much increased, by referring to the varieties of fruits and seeds, in all of which the utmost care is manifested in the protection of the embryo or young plant, and the most delicate food provided for its support, until capable of procuring it by its own resources. It is these substances which man has seized upon, and has converted to the relief of his many wants, which instinct seems to have taught, to be in many instances particularly well adapted to his nature. Thus is the chain of dependence established, and plants become the laboratories in which is prepared the food for animals. So true are the words of scripture—"all flesh is grass." The grass fadeth, and the flower withereth, but the glory of the Eternal one remains forever.

Members of the Horticultural Society!—The third anniversary of our Society has been completed, and we look back and inquire what has been done to advance the cause in which we have engaged. We naturally inquire whether the advantages our commercial situation affords, have been improved to the extent they are capable, and whether productions of other countries have been naturalized and made our own. Our forefathers have, with a zeal highly laudable, enriched our gardens with the gems of other climates; and for ages have they afforded us their annual contributions of pleasure and of beauty. The Jessamine, (called the *Arabian)* comes to us from the East-Indies; the Tulip from Cappadocia; the Narcissus and the Pink from Italy; the Lily from Syria; the Rose from Java and Ceylon; the Aster from China; and the Gardenia from the Cape-of-Good-Hope. Have we, with our increased facilities, extended the stock which they planted—have we multiplied species, or introduced new varieties? I venture, with much confidence, to say, we have—and though a very laubable spirit existed on this subject, previous to the establishment of our Society, yet we may claim some share in its extension, and of introducing the

bantlings, and fair productions of others into more general notice, and thus to more general cultivation.

In Flowers and Shrubs, we owe a large amount of gratitude to our female contributors. They have done much, and are still actively engaged. They not only have furnished our exhibitions with the choicest and the rarest flowers that the season afforded, but present us bright examples in the successful rearing and cultivation of them. Of Roses, an infinite variety exist, and of the most beautiful descriptions. The catalogue would be too long to introduce in this place; but from seventy to one hundred species have at one time been cultivated; among these the Greville—the Noisette—the Herbemont—the Tea—the Delicatesse—the Cabbage, and others; not single specimens, but flourishing in the utmost profusion. From the first view which burst upon the eye, we are almost

> "Reminded of the vale of Cashmere,
> "With its roses the sweetest that earth ever gave."

By seedlings, grafts, and other modes, has this beautiful tribe been greatly extended, and promises to be still more so.

The Tulips, Hyacinths, Rhanunculus' of Holland, are seen in all their beauty, variety and splendour. To the taste which fosters these productions, are we indebted for these additional pleasures spring annually presents.

A great variety of other plants might be mentioned, remarkable for their beauty or fragrance; and here we ought not to omit the fine collection of Dahlias, furnished by a very active and useful member of our Society.* A list has been prepared of plants introduced by members of our Society, and by ladies who have been contributors to our exhibitions.

In the article of Fruits, enough has been done to satisfy us, how much may be accomplished, in improving our present stock, and of the successful cultivation of new varieties. Peaches, Nectarines, Apricots, may be cultivated for years, without being attacked by worms, provided the surface of the soil, in which they have been planted, is kept hard, by paving with bricks, or a stratum of lime, sand, or clay, or other means. Peaches have been sent by residents of this city to their friends at the North, which have been pronounced the finest they had seen.

* Mr. Nicholson.

Fruit Trees, introduced from France, and the southern parts of the continent of Europe, succeed much better with us than those brought from the Northern parts of our continent, or Europe. The success which has attended Mr. Michel's exertions on this subject, and other gentlemen, are quite satisfactory; and fully prove, that by care and attention, fruits as fine can be raised among us, as any where else. By grafts and inoculations, the stock is not only improved, but may be perpetuated for years without any deterioration; and, if attention would only be paid to this subject, a very small portion of the land bordering our Rail-road, would supply Charleston with as fine varieties as any city of the Union.

Plums, Prunes, and Cherry trees have been brought from France and Portugal, and produce fruit of a fine quality. Strawberry plants from England, France, and New-York, cultivated with common care, have produced as fine fruit as those countries can boast; and with ordinary attention the plants of this country may be much improved.

In the department of Vegetables, such as have been presented, were of an excellent quality, and afford full satisfaction of our ability to furnish all that may be required in the highest perfection.

In conclusion, I need not excite you to continue the work in which we are engaged. I need not urge upon you, of how much advantage may be labours of this Society, singly and collectively, in placing the character of our citizens on an eminence for attention to horticultural pursuits. These pursuits are not only a source of great pleasure, but the rewards they offer are full of comfort and satisfaction. Consider only what cultivation accomplishes every day, and you will be convinced that its influence is no less felt and exhibited in the vegetable, than in the animal system. Who would suppose, that the pleasant *plum* was derived from the sour *sloe*, or the *golden pippin* from the austere *crab-apple* of the woods—that the common *colwort*, by culture, continued through many ages, appears under the improved and more useful forms of *cabbage*, *savoy* and *cauliflower*.* *Celery*, is but *parsley*, in an advanced state of cultivation. *Asparagus*, in its

* Paris' Pharmacologia.

natural condition, can scarcely be recognized as the same article, which, when domesticated, is a table luxury. The *potato*, insignificant and uninviting in its natural state, by cultivation through a term of years, has become the food of millions of our race. Let us then persevere; the good fortune of some of us may lead to such results, as may prove of infinite advantage to mankind.

ART. XLIX.—*On the Selection of Soils for a Vineyard; by* HIGHLANDER.

"Hancock County, (Geo.) July, 1834.

Mr. Editor,—Six or eight years ago, a desire to cultivate the vine, seemed to be spreading so extensively through South-Carolina and Georgia, that by this time it was expected we should have, if not abundant supplies of good domestic wine, at least such reports of progress as would furnish valuable directions to adventurers of the present day. For such reports I have looked in vain to the pages of your useful repository, and other accessible sources of information. It was never probable, that every vine planted would succeed well, because too little was known in this country of the culture, eligibility of soils, or variety of the vine to be planted. Except Mr. Geiger, Mr. Herbemont, and a few others in Carolina; and, perhaps, about the same number in Georgia, I have heard of no experimenter, whose achievements in wine-making, can be regarded as, at all encouraging. Every one has raised vines, which in the spring season, give fair promise of fruit; but unluckily before vintage, mildew, rot, or some other form of malady, seems, in most instances, to have destroyed most or all of the crop. Such, at least, has been the fate of mine, and several other small vineyards within the range of my observation, though I have remarked a few notable exceptions.

A knowledge of the causes of failure and of success is in great demand by all who think of prosecuting this interesting branch of cultivation; and this cannot, so certainly

and conveniently be had, in any other way as by detailed accounts of experiments, setting forth the mode of planting the vines, the kind of earth in which they may have grown—whether clay, sand or loam predominates—the name of the vines, method of tillage and training, together with the experimenter's own remarks on the subject. It is in the hope of drawing from some of the readers and patrons of the *Agriculturist*, that I ask the publication of this article.

It has been said, I know, that an annual excision of the superficial roots of the vine, so as to force the plant to subsist and propagate fruit, by the roots more deeply rooted beneath the surface, would be found a security from mildew and rot. This mode of treating vines is often practised in this country, and possibly with beneficial effects. Mine, however, which grow thriftily in a deep sand have not matured one half the fruit.

It has also been said, that sandy and rather poor land produces more perfect and richer berries than soil of greater fertility, and more largely mixed with clay. This, too, is contradicted by my observation. By far the most thrifty and valuable vineyard, I ever saw, comprising six or eight varieties of the grape, on about seven acres, is now cultivated in the county of Jasper, (Georgia) on a high hill of pretty rich red clay and very stony. I saw it last July in full bearing, the fruit just beginning to ripen, and not a berry diseased, except a few Isabellas, and, perhaps, one other variety, the name not now remembered. The excessive wet weather of last spring was fatal to grapes growing on sandy soils; yet the vineyard in Jasper, on red clay, was never more prolific, yielding, as I understand, between one and two thousand gallons of wine, which the skilful and fortunate cultivator, Col. Alexander, sells readily at from one and an half to two and an half dollars a gallon, when above one year old. But this was not the only instance of pretty uniformly good crops being produced on rich red clay lands.

What time may do for vines which grow on poor and sandy land, our brief experience in the culture of the article has not yet shewn—such lands, I know, are recommended by most European writers; yet it is well known that in a state of nature, it is our rich woodlands only that produce our thriftiest vines and the richest fruit. The ex-

perience of Europe may be different, or as has been often stated, and yet no safe guide in this respect to the American adventurer.

The most productive vines I ever saw, is the mother of that family of excellent grapes, known as the "Devereux grape." It stands in my neighbourhood, is now thirty years old or upwards, and has been trained on arbours to the length of one hundred feet or more—never much pruned—produces a good crop every year, and grows in soil almost as rich as manure can make it. I have a number of thrifty vines of the Devereux grape in a vineyard of rather poor sandy land, which have not perfected fruit oftener than one year in three since they began to bear—they may do better when older; but from the facts that have fallen under my notice, I would, for the location of a vineyard, select the richest red clay of suitable elevation that I could find. Long spells of rain, will, I fear, ruin the fruit of any vines in this country which grow on beds of deep sand—unless, indeed, such consequences may be averted by copious applications of manure.

HIGHLANDER.

ART. L.—*On Cutting up and Curing Pork; by* Z.

If black puddings are to be made, the blood should be salted and stirred until cold. The cases should be *immediately* cleaned and well washed in different waters, and then put into a large piggin of very strong salt and water, in which they should lie the whole night. Early the next morning they should again be scraped, and washed, and put into another vessel of salt and water. They should now be *particularly* attended to (after they have undergone the above process) by a careful house-keeper, and separately examined and put into a vessel of clean water, out of which they are taken for use.

The butcher should divide the hog so as to leave the chine entire. He then hangs the meat in a cool place and

lays the heads entire upon a shelf. Early the next morning the butcher proceeds to divide each part into three, (first cutting off the feet and drawing out the leaf-fat,) the shoulder, the side, and the ham; and leaves the spare ribs and other pieces for the house-keeper to attend to. She should also examine the pieces when the butcher has left them.

The hams should be prettily shaped, round, and if necessary, trimmed with a sharp knife, and the broken pieces of bone taken off. The pieces thus taken off are the best for sausages, and are never eaten at table. The gammons should also be prettily shaped and trimmed to the shoulder blades, as there is much tender meat that is rubbed off in the curing and thereby wasted, but if taken off with a knife, increases the quantity of sausage-meat. If the chines are to be used at table, the fat should be left on the two larger ones, but if not, it should be half or more taken off, (if the hogs are very fat) as the part next the bone is the best for sausages. The chine is divided into five or six pieces, as they are intended to be used.

Salting.—We allow four good quarts of the best salt, and one heavy ounce of saltpetre to each hog, unless they are uncommonly large, then a quarter more of salt. Give half of the whole quantity of salt to be beat (not too fine) before you commence, and measure it after being beat. This is generally used the first day, as the first rubbing always requires more. When this rubbing is over, give the other half of salt to be beat, and that, if not wasted, will complete the curing. The saltpetre must be beat, and half put into a plate with a little molasses, and the other half into a tea cup to be used next day. All things being thus prepared. The heads must be cut open on the under side, and the tongne taken out whole. The heads require washing, and should drain a few minutes after. They must then be well rubbed with salt, and some be put into the eyes, ears, &c., and then laid with the side that has the skin on, downwards in the bottom of the tub in which they are to be kept.

Next, the tongues and chines are salted and put upon the heads, then the sides with the skin downwards. In rubbing, the salt should go upon every part, but not be heaped upon it, as it only melts and runs off, the meat retaining that which is next to it.

Now let the hams and gammons be spread upon the table, and divide the saltpetre, which is mixed with molasses between them, putting rather more upon the hams than gammons, as they are much thicker and more valuable; put the saltpetre with a tea-spoon upon the middle, near the bone of the ham, and spread it only there, as it will spread itself to the other parts when salted. It should not be allowed to run down the sides, which it will do if there is too much molasses. Salt the skin sides of the gammons, then the sides, and rub them upon the salt on the table, instead of turning the pieces over; after which salt the top or part without the skin, and lay the gammons in the tub, with the skin sides down. The hams will then be rubbed, the skin sides drawn upon the table, and the sides with the hand, then sprinkle the salt upon the tops, where saltpetre has been put until it is quite covered, they must then be laid in the tub upon the gammons, and the tub be covered. In rubbing, an inexperienced person will tear open the meat in many places and make it rust very soon. The hand should be opened and the meat rubbed with the palm instead of the fingers, except on such parts as cannot be torn open.

The day after take out all the pieces, (except the heads, chines and tongues,) draining off the pickle into the tub and lay them upon the table. Then examine the chines and heads, and if they are still covered with salt, or a part of the under ones with pickle, let them continue so (only changing their situation) without additional salt. It is very seldom they require salting the second time, but their position should be changed every other day, and after the third day put the upper head under and the lower one above, and let the chines be put in the vacancies between the heads. Unless the weather is warm, these pieces will be cured by the pickle and saltpetre which drips from the upper pieces. These pieces being attended to, salt and rub the sides and lay them in the tub. Then spread the hams and gammoms upon the table, and let the skin part be down, (as the saltpetre would not penetrate the skin) put the remaining half upon the hams and gammons and rub it in. Then salt them if there is no salt upon them, on every part; put the gammons in first and the hams upon them. Every other day the hams and gammons and sides must be taken out, and the heads and chines moved about in the pickle, those which were up being put under

the others. The heads are very easily spoiled, they should, therefore, be lower in the pickle, and the smaller chines put in the vacancies between, if there is not room for the larger ones. Lay the sides upon these, and if there is pickle enough to touch one or two, or more of the sides, that will cure them without more salt; but those which are not in or touched by the pickle must be salted again and again, according to the salt which is found upon them and the warmth of the weather. The gammons must be separately rubbed, and after the first three or four days turn them about in rubbing them, because there is no danger of the saltpetre being thrown off. Then carefully rub and salt the hams, which are the most apt to spoil, and after three days rubbing them, turn the hock up, and squeezing the upper part of it, to force out the blood, which, in that position, will run freely from the middle of the ham. Salt every part and rub carefully, then lay them upon the gammons in the tub. The whole should be attended to, and all the upper pieces salted a little at a time every other day for three weeks, but the salt is generally done in a fortuight, then they are rubbed with a dry hand a week longer. The heads are never taken out of the pickle to be rubbed, but must be moved about in it, and their places changed with the chines occasionally. After the first ten days, put the hams below some of the sides and all the gammons, that their weight may press the blood from the hams, but the hams and gammons must never be allowed to go into the pickle.

By attending to this method a servant soon gets into the way, and it makes the very best cured hams and bacon. They are not, as many hams are, too salt to be eaten with comfort, and are remarkably full of gravy. But attention must be paid to the application of the salt, as servants are apt to put too much salt upon some pieces, while others are suffered almost to spoil for the want of it.

Pressing the Meat and Smoking.—After three weeks, put the meat to be pressed. Lay the heads down first, then the hams and gammons—last, the sides, all with the skin part *uppermost*, cover them with boards, and put heavy stones and other weights upon the boards, having been pressed two days, rub some rice flour over them, and hang them in the smoke-house. The heads, sides and gammons should be smoked a fortnight, and the hams about three weeks. Saw dust and rice-chaff are the best to

smoke with, making it up regularly every morning. If chaff cannot be obtained saw-dust will answer. The chines and tongues may remain in the pickle a little longer or may be hung up. Meat should be packed up in clean sifted chaff before or early in March, as in that month the flies appear, which injure so much meat.

Z.

ART. LI.—*Process of Manufacturing Indigo in small quantities for family use; by* Mrs. N———, *of North-Carolina.*

Mr. Editor,—Cut the Indigo when the under leaves begin to dry, and while the dew is on them in the morning, put them in a barrel, fill it with rain water, put weights on it to keep it under water; when bubbles begin to form on the top, and the water begins to look of a reddish colour, it is soaked enough, and must be taken out, taking care to wring and squeeze the leaves well, so as to obtain all the strength of the plant; it must then be churned (which may be done by means of a tolerable open basket, with a haudle raising it up and down) until the liquor is quite in a foam, you must try when it is done enough, by taking out a spoonful in a plate, and putting a small quantity of *very strong ley* to it. If it curdles, the indigo is churned enough, and you must proceed to break the liquor in the barrel in the same way, by putting in ley, which must be as strong as possible, by small quantities, and continuing to churn, until it is all sufficiently curdled; care must be taken not to put in *too much ley*, as that will spoil it. When it curdles well with the ley, it must be sprinkled well over the top with oil, which immediately causes the foam to subside, after which it must stand till the indigo settles to the bottom of the barrel, which may be discovered by the appearance of the water, which must be let off gradually, by boring holes first near the top, afterwards lower, as it continues to settle; when the water is all let off, and nothing remains but the mud, take

that and put it in a bag, (flannel is the best) and hang it up to drip, afterwards spread it to dry on large dishes.

Take care that none of the foam, which is the strength of the weed, escapes; but if it rises too high, sprinkle oil on it.

ART. LII.—*On Lupinella Seed: by* A FARMER.

"Blue-House, August 10, 1834.

Sir,—Allow me to invite inquiry concerning the Lupinella Seed. Sould any experiment have been made with it by any of your subscribers, it would afford me pleasure to read a statement of them in your useful journal, which, perhaps, may contribute to the interest of more than one subscriber.

The Lupenella—the seed of this most valuable grass has been trasmitted to the Secretary of State from Leghorn, and by him to the Governor of Georgia, with the following communication:—

"I have lately received from our Consul at Leghorn, in Italy, a parcel of Lupinella Seed, which is represented as the finest grass cultivated in that country, for the quantity and richness of the hay, and its fertilizing effects upon the land in which it is cultivated.

"*Three years cultivation of this grass enriches the poorest land, &c. &c.*"

A FARMER.

P. S. I should like to know where the seed can be procured.

[The Editor has inserted the above inquiries, in hopes that some of the individuals who have some of the Lupinella Seeds, will favour him with the results of their experience, for the next number of this journal, when he hopes to be able to present some remarks on the cultivation of such native and exotic Grasses, as are adapted to this climate.]—*Editor.*

PART II.

SELECTIONS.

Art. LXXI.—*On the Science of Agriculture.*

[FROM THE ENCYCLOPÆDIA OF AGRICULTURE.]

Origin and Principles of Culture as derived from the study of Vegetables.—The final objects of all the sciences is *their application to purposes subservient to the wants and desires of man.* The study of the vegetable kingdom is one of the most important in this point of view as directly subservient to the arts which supply food, clothing and medicine; and indirectly to those which supply houses, machines for conveying us by land or by water, and in short almost every comfort and luxury. Without the aid of the vegetable kingdom, few mineral bodies would be employed in the arts, and the great majority of animals, whether used by man as labourers, or as food, could not live.

Agriculture and gardening are the two arts which embrace the whole business of cultivating vegetables, for whatever purpose they are employed by civilized men. Their fundimental principles as arts of culture are the same; they are for the most part suggested by nature and explained by vegetable chemistry and physiology, and most of them have been put in practice by man, for an unknown length of time, without much reference to principles. All this is necessary, therefore, for effecting this branch of culture, is to imitate the habitation and to propagate. This is, or ought to be, the case, whenever plants are grown for medicinal or botanical purposes, as in herb or botanic gardens. Nature is here imitated as exactly as possible, and the result is, productions resembling as near as possible, those of nature.

To increase the number and improve the qualities of plants, it is necessary to facilitate their mode of nutrition by removing all obstacles to the progress of the plants. These obstacles may either exist under or above the surface; and hence the origin of draining, clearing from surface incumbrances, and the various operations as digging, ploughing, &c. for pulverizing the soil. Nature suggests this in accidental ruptures of the surface, broken banks, alluvial deposites from overflowing rivers, and the

earth thrown up by underground animals. Many of the vegetables within the influence of such accidents are destroyed, but such as remain are ameliorated in quality, and the reason is that food is increased, because their roots, being unable to take a more extensive range, more is brought within their reach.

It is necessary, or at least advantageous, to supply food artificially; and hence the origin of manuring. All organized matters (animal and vegetable substances) are capable of being converted into food for plants. But the best manure for ameliorating the quality, and yet retaining the chemical properties of plants must necessarily be the decayed plants of their own species. It is true that plants do not differ greatly in their primary principles, and that a supply of any description of putrescent manure will cause all plants to thrive, but some plants, as wheat, contain peculiar substances, (as gluten and phosphate of lime,) and some manures, as those of animals, or decayed wheat, containing the same substances, must necessarily be a better manure or food for such plants. Manuring is an obvious imitation of nature, every where observable by the decaying herbage of decaying plants, or the falling leaves of trees, rotting into dust or vegetable mould about their roots, and by the effects of the dung left by pasturing cattle, or other animals.

Amelioration of climate is farther advantageous, in improving the quality of vegetables, by increasing or diminishing its temperature, according to the nature of the plant; unless indeed, it is situated in a climate which experience and observation show to be exactly suited to its nature. Hence the origin of shelter and shade, by means of walls, hedges, or strips of plantation; of sloping surfaces or banks, to receive more directly or indirectly the rays of the sun; of rows, drills and ridges, placed north and south, in preference to east and west, in order that the sun may shine on both sides of the row, drill, or ridge, or on the soil between rows or drills, every day in the year; of soils better calculated to absorb and retain heat; walls fully exposed to the south or north; of training or spreading out the branches of trees upon these walls; of hot-walls; of hot-beds; and finally of all the variety of hot-houses. Nature suggests this part of culture, by presenting, in every country, different degrees of shelter, shade and surface, and in every zone, different climates.

The regulation of moisture is the next point demanding attention; for when the soil is pulverized, it is more easily dried by the penetration of the air; when an increase of food is supplied, the medium through which that food is taken up by the plant should be increased, and when the temperature is increased, the evaporation becomes greater. Hence the origin of watering by surface, or subterranean irrigation, manual supplies to the root, showering over the leaves, steaming the surrounding atmos-

phere, &c. This is only to imitate the dews and showers, streams and floods of nature; and it is to be regretted that the imitation is in most countries attended with so much labour, and requires so much nicety in the arrangement of the means, and judgment in the application of water, that it is but very partially applied by man in every part of the world, except in Italy. But if moisture be excessive; and on certain soils at certain seasons, and on certain productions at particular periods of their progress, it may be necessary to carry off a great part of the natural moisture, rather than let it sink into the earth, or draw it off where it has sunk in and injuriously accumulated, or prevent its falling on the crop at all: and hence the origin of surface drainage by ridges, and of under draining by covered conducts or gutters; and of awnings and other covers to keep off the rain or dews from ripe fruits, seeds, or rare flowers.

The regulation of light is the remaining point. Light sometimes requires to be shut out, and sometimes to be increased, in order to improve the qualities of the vegetables; and hence the origin of thinning leaves which overshadow fruits and flowers, the practice of shading cuttings, seeds, &c. and the practice of branching. The latter practice is derived from accidents observable among vegetables in a wild state, and its influence on their quality is physiologically accounted for by the obstruction of perspiration, and the prevention of chemical changes effected by light on the epidermis.

Increasing the magnitude of vegetables, without reference to their quality, is to be obtained by an increased supply of all the ingredients of food, distributed in a body of well pulverized soil as the roots can reach to; of heat and moisture; of the partial exclusion of the direct rays of the sun, so as to moderate perspiration; and of wind, so as to prevent sudden desication [drying.] But experience alone can determine what plants are best suited for this, and to what extent the practice can be carried. Nature gives the hint in the occasional luxuriance of plants accidentally placed in favourable circumstances, and man adopts it, and improving on it, produces cabbages and turnips of half a hundred weight; apples of a pound and a half; and cabbage roses of four inches in diameter; productions which may in some respects be considered diseased.

The preservation of vegetables for future use, is effected by destroying, or rendering dormant, the principle of life, and by warding off, as far as practicable, the progress of chemical decomposition. When plants or fruits are gathered for use or preservation, the air of the atmosphere which surrounds them is continually depriving them of carbon, and forming the carbonic acid gas. The water they contain, by its softening qualities, weakens the affinity of their elements; and heat produces the same effect by dilating their parts, and promoting the decompos-

ing effect both of air and water. Hence drying in the sun or in ovens, is one of the most obvious modes of preserving vegetables for use, as food, or for other purposes, but not for growth if the drying process is carried so far as to destroy the principle of life in seeds, roots, or sections of the shoots of ligneous (woody) plants. Potatoes, turnips, and other esculent roots, may be preserved from autumn to the following summer, by drying them in the sun, and burying them in a soil perfectly dry, which shall be at the same time at a temperature but a few degrees above the freezing point. Corn (grain) may be preserved many years by first drying it thoroughly in the sun, and then burying it in dry, cool pits, and closing these so as effectually to exclude the atmospheric air. In a short time, the air within is changed to carbonic acid gas, in which no animal will live, and in which, without an addition of oxygen or atmospheric air, no plant or seed will vegetate. The corn is thus preserved from decomposition, from insects, vermin, and from vegetation, in a far more effectual manner than it can be in a granary. In this way the Romans preserved their corn in chambers hewn out of dry rock, the Moors in the sides of hills, the Chinese, at the present day, in deep pits, in dry soil, and the aboriginal natives of Africa, earthen vessels hermetically sealed. The origin of these practices are all obvious imitations of what accidentally takes place in nature, from the withered grassy tussock to the hedgehog's winter store; and hence the origin of herb, seed and root rooms and cellars, and packing plants and seeds for sending to a distance.

The whole of the art of vegetable culture is but a varied developement of the above fundamental practices, all founded in nature, and for the most part rationally and satisfactorily explained on chemical and physiological principles. Hence the great necessity of the study of botany to the cultivator, not in the limited sense in which the term is often taken, as including mere nomenclature and classification, but in that extended signification in which we have here endeavoured, proportionately to our limited space, to present the study of the vegetable kingdom.

Art. LXXII.—*Explanation of Agricultural Terms.*

[FROM GOODSELL'S GENESEE FARMER.]

1. *Broad-Cast Husbandry*—is that in which the grain or seed is sown by a cast of the hand, so as to be strewed equally as possible over the whole ground.

2. *Drill Husbandry*—is that in which the grain or seed is sown in rows, by means of machines contrived for that purpose, and the ground afterwards kept stirred and cleared of weeds by a kind of plough called the horse-hoe, hence sometimes called the *horse-hoeing husbandry.*

3. *Convertible Husbandry*—is when the ground is cultivated alternately in tillage and grass. This is much practised in some parts of the country, with wheat and clover. A field in clover soon after haying, is turned up and sowed with wheat and clover seed. After the wheat is taken off it is once mowed, when it is again ploughed up and sowed as before; thus the ground carries the wheat every other year, and the intermediate years, clover. The term applies also to a succession of any kind of crops in which grass is comprehended as one.

4. *Trench Ploughing*—is running the plough twice in the same furrow. In doing this the top soil, with all its foul weeds, cast to the bottom of the trench, a new soil is thrown up on which the sun has never before shed its rays. It is done sometimes at one operation, by a plough constructed for the purpose, called a trench plough.

5. *Horizontal Ploughing*—is so conducted by the use of an instrument, called "ratter level," as to lay the side hills in horizontal beds, about six feet wide, with deep hollows or water furrows between, for the purpose of retaining the rains.

6. *Indigenous Plants*—are such as are natives of the country in which they are found or grow. Thus, maize, the potato, and tobacco, are called indigenous to America, having been found here, and from America introduced into Europe.

7. *Exotic Plants*—are such as are natives of foreign countries. Such as the lemon tree, and many others, when introduced into the New-England States, are cultivated in hot-houses.

8. *Annual Plants*—are such as are of but one year's duration. Such are the most of our garden plants, and all others growing from seed sown in the spring, which are at maturity in the summer or autumn following, producing flowers and ripe seed, and afterwards perish both in their tops and roots.

9. *Biennial Plants*—are such as, in their roots at least, are of two year's duration. Many of these plants perish in their tops the first year, but live in the roots through the winter, and the second year shoot stalks, flower, produce seed, and afterwards

perish both in roots and branch. Such are the parsnip, carrot, &c.

10. *Perennial Plants*—are such as are of many year's duration. Such are all plants whether the leaves and stalks perish annually or not, provided the roots are of many year's duration, as the horse-radish, burdock, &c.

11. *Herbaceous Plants* are those whose herb, that is, whose stem and branches are of but one year's duration whether the roots be annual, biennial, or perennial.

12. *Esculent Plants*—are such as are replete with nutritious matter, consequently proper for being eaten as food. Such are parsnips, carrots, cabbage, and various others of a similar nature.

13. *Umbeliferous Plants*—are all such as produce their flowers on the end of numerous little flower stocks, or rays, nearly equal in length, spreading from a common point or centre, forming a level, usually convex or globose surface, somewhat like a spread umbrella, as the parsnip, carrot, &c.

14. *Leguminous Plants*—are those of the pulse kind, which producing their seeds in pods, may be gathered by the hand, as peas, beans, &c.

15. *Culmiferous Plants*—are all such as have smooth pointed stems, and whose seeds are inclosed in chaffy husks or coverings. All the grains and most of the grasses, as well as many other plants are of this kind.

16. *Deciduous Plants*—are all such plants whether of the tree or shrub kind, as shed or lose their leaves in the autumn or winter seasons.

17. *Tuberous Plants*—are such as consist of one or more knobbed tubes of a solid fleshy substance, as the potato, artichoke, &c.

18. *Bulbous Roots*—are such as have a roundish, swelling, bulbous form, composed of numerous scales or coats, as the onion, garlic, &c.

19. *Tap Roots*—are such as in the form of a tap descend down into the ground in a perpendicular direction, as the carrot, parsnip, red clover, &c.

20. *Fibrous Roots*—are such as are wholly composed of numerous thready or fibrous parts, such as the roots of all kinds of grain.

21. *Fadicles or Radicles*—in botany, are in the small fibrous roots, which extend themselves in every direction in the earth for the purpose of collecting nourishment for the support of the plant.

22. *White Crops*—are such as become bleached, and dry while ripening their seed; such are all the various kinds of grain.

23. *Green Crops*—all plants while their leaves continue green, and especially such as having large leaves, draw much of their

nourishment from the atmosphere. The *green crops*, therefore, exhaust the soil much less than the *white crops*, whose leaves becoming dry, receive nothing from the atmosphere, but draw all their support from the soil while ripening their seed.

24. *Rotation of Crops*—is a course of different crops, in succession on the same piece of ground, for a certain number of years, after which the course is renewed and goes around again in there same order. There is a difference between a *course of crops* and a *rotation of crops*. Thus, if a piece of ground in sward be taken up and planted with Indian corn the first year, the second year with potatoes, the third year sowed with oats and grass seed: and mowed the fourth, fifth and sixth years, this makes a course in crops. If then the seventh year is again to be broken up, planted as before, and the same course of cropping pursued, it becomes a *rotation of crops*.

25. *Soiling*—is the feeding of cattle, either in the barn or yard, through the summer, with new mown grass or roots.

26. *Live Hedge*—is a fence formed of living plants, usually the white thorn, planted closely in rows, which being trimmed annually, and kept clear of weeds, in a few years grew into a living permament fence, capable of stopping effectually every kind of domestic animals. Most of the common farm fences in England are of this kind.

27. *Quicks*—a name commonly given to the young plants of the white thorn used in planting hedges.

28. *Layers*—are the tender branches of trees and shrubs bent down and buried in the earth, leaving the top out, in which situation they are fastened with hooks to prevent their rising. The part in the earth sends out roots, after which it is separated from the parent tree, and transplanted in the same manner as the trees raised from the seed.

29. *Cuttings or Slips*—are small portions of the twigs, branches or roots of plants, cut off with a knife, or slipped off with the thumb and finger, for the purpose of setting or planting in the earth, with a view of producing new plants or trees of the same kind.

30. *Sets*—are young plants taken from the seed-bed to be set or planted out. Cabbage, and various plants are usually propagated in this way, being first sown in a bed, from which the plants are taken up and set out in fields or gardens.

31. *Fallow*—signifies land in a state of rest, not being planted or sown for a season, but repeatedly ploughed and harrowed, for the purpose of clearing it of weeds and dividing and pulverizing the soil more perfectly. Such is sometimes called a *naked fallow*, because the land carries no crop.

32. *A Green Fallow*—is that where the land has been rendered mellow and clean from weeds, by means of some kind of green crops, such as turnips, peas, potatoes, &c. cultivated by

the horse plough and hoe. The crop so cultivated and for the above purpose, is called a fallow crop. In this mode of fallowing, no time is lost by the land being left idle or in an unproductive state. Fallowing is sometimes distinguished by the season of the year in which the business is either principally or wholly accomplished; hence we have summer, winter or spring fallow.

33. *Winter Fallow*—is only breaking up the land, or ploughing in the fall, and leaving it exposed to the action of the frosts of the winter.

34. *Dibble*—is a tool of very simple construction, for making holes in the ground at equal distances, in which certain seeds are sometimes planted. Seeds planted in this way are said to be dibbled in. It is used in transplanting. The handle of an old spade or shovel, sharpened at the lower end, may answer very well for this purpose.

35. *Carbonic Acid*—is a combination of carbon and oxygen, in the proportions of eighteen parts carbon to eighty-two parts oxygen. The sources of this acid are immense: it exists in the atmosphere, it is found in abundance in many mineral waters, as at Ballston and Saratoga, in the State of New-York; it is produced by the combustion of wood and charcoal; by the fermentation of liquors, and by the decomposition or putrefaction of vegetable substances; but the largest store of it is that enormous quantity solified or rendered solid in all immense beds of chalk and limestone with which every part of the globe abounds. Of limestone, 45 parts in every 100 are computed to be carbonic acid. As before observed, when uncombined with any other substance, it always exists in the state of gas. It is heavier than atmospheric air. If this gas be poured from a wide mouthed jar upon a lighted candle, it will be as effectually extinguished as by water.

36. *Effervescence*—is a sudden disengagement of gas taking place within a liquid, and separating that with a hissing noise. We have an example of this, as before observed, by dropping a little pearlash into cider. The carbonic acid is disengaged and rises in the form of gas, producing much foam, with a hissing noise.

37. *Chemical Affinity*—is a term used to signify the attraction or tendency there is between the particles of certain substances *of different natures* to unite, thereby forming a *third* substance possessing properties altogether different from those of either of the two substances of which it is composed. Thus, potash and oil have a tendency to unite, thereby forming *soap*, which is a *third* substance very different either from the oil or the potash of which it is composed. Those substances which are *capable* of uniting in this manner, are said to have an *affinity* for each other, as oil and potash; but oil will not unite with water, and

therefore, those substances which do not form a chemical union, are said to have no *affinity*.

33. *The primitive Earths*—are four, viz. clay, sand, lime, and magnesia. These are the only earths which enter into the composition of soil; they also enter in very minute portions into the organization of plants. Sand and clay are by far the most abundant; lime is required but in small proportions: every soil, however, is defective without it. Magnesia is found but in few soils; its place is well supplied by lime; its entire absence, therefore, is not considered any defect.

39. *Clay*—in agricultural publications, is called allumina, alumine, aluminous, or argillaceous earth. The term *clay* should not be given to a soil, which contains less than one-sixth part of aluminous earth.

40. *Sand*—is called silex, silica, silicious earth, or earth of flints. "The epithet sandy is not properly applied to any soil, that does not contain at least seven-eight parts of sand, and sand soils are to be distinguished into *silicious sandy*, or flinty sand, and *calcareous sandy*, or chalky sand."

41. *Lime* as it exists in the soil, is commonly called calcareous earth. "The word *calcareous* is not properly applied to any soil, unless a specimen of it is found strongly in effervence with acids; or unless water having a channel in the soil affords a white earthy deposite when boiled." "Each of these earths answer a determinate and specific purpose in the economy and growth of plants; and the perfection of soil lies in a mixture of the whole."

42. *Basis of the soil*—by this term is understood the primitive earths which enter into its composition.

43. *Vegetable Matter*—all vegetable substances in a decaying or rotton state.

44. *Animal Matter*—all animal substances in a purifying state.

45. *Organic Matter*—is a term applied both to animal and vegetable substances in a putrifying state.

46 *Vegetable Mould*—the earthly remains of vegetable substances which have either grown and decayed on the soil, or have been conveyed thither in the progress of cultivation.

47. *Loam*—is a combination of vegetable mould with the primitive earths.

48. *Peat*—is a substance dug out of swamps; it is produced from the decay of vegetables; is of a fibrous texture, and may be cut with a spade. Peat is frequently used for fuel; it is of no use as a manure until it shall be brought into a state of fermentation, or putridity, which may be done by mixing it with other manures. Running water also extracts its antiseptic qualities, and leaves it ready to pass into a state of decomposition.

49. *Marle*—is a substance consisting of lime with a small portion of clay, and sometimes of peat, with a mixture of marine and animal remains. It is found extensively in some situations, at different depths under ground, and is distinguished into shell, clay, and stone marle. It is useful as a manure.

50. *Putrescent Manures*—are all animal and vegetable substances in a decaying state.

51 *Excrementitious Matter*—is the manure from animals.

52. *Long Manure*—is green barnyard manure before it is rotted.

53. *Short Manure*—is barnyard manure made fine by rotting, so as to cut easily with a spade.

54. *Fossil Manures*—are lime, marle, plaster of Paris, and other substances which operate on the mechanical constitution of the soil, but do not afford direct nourishment to plants.

55. *Compost Manure*—is that which is formed by the mixture of various substances, as turf, pond mud, weeds, ashes, lime, &c. with stable or yard manure, so as to constitute one uniform mass or substance, fit for the improvement of the soil.

56. *Irrigation*—is the turning of water from its natural channels, so as to render them more highly productive.

57. *Tilth*—is the condition in which ground is left after tilling. When it is well pulverized by the plough and harrow, and made light to a sufficient depth, it is said to be in good tilth.

58. *Stumming Casks*—is burning within them matches covered with sulphur. A strip of cloth, ten or twelve inches long, and from one to two inches wide, smeared with melted sulphur, and lighted, is let down into the cask, and suspended from the bung. Some have a long, tapering bung, that may fit any cask, with a crooked wire in the small end, from which to suspend the match.

59. *Must*—is the new liquor pressed from apples or grapes, before it has worked or fermented.

60. *Lees*—is a term used to signify the gross sediments or settlings found at the bottom of casks containing fermented liquors.

61. *To rack Cider or Wine*—is to draw them from off their lees or sediment, into clean casks.

Art. LXXIII.—*Composts.*

[FROM THE CULTIVATOR.]

Much has been said and written in favour of compost manures; and under many circumstances they really afford a valuable accession to the fertilizing materials of a farm. But when the object to be obtained is not fully understood, they sometimes occasion a useless expenditure of labour. Composts are a mixture of animal dung, lime, ashes, vegetable matter and earths—two or more of them. The economy of composts consists in first, saving the gaseous matter which escapes from manure while undergoing fermentation, and the liquids which flow from the dung heap; and second, in rendering vegetable matter soluble, and food for plants which was before inert and useless. Thus if earth is mixed with and spread over a pile of dung while it is fermenting, it imbibes the volatile and liquid parts of the manure which would otherwise be lost, and this becomes almost as fertilizing as the manure itself. This fact shows that manure loses much in fermenting, for it loses all the earth gains. If peaty or swamp earth is employed, a double object is gained; for while it prevents waste in the manure, it is of itself converted into manure, (being composed of vegetable matter,) by the process of fermentation. But when the object is merely to prevent waste in the dung, the process is most economically effected *in the soil;* where both the gases and the liquids will be retained, and by which the transportation of the earth to and from the dung yard, is saved. When the manure cannot be conveniently used upon *hoed* crops before fermentation, then a bedding and covering of earth for the pile is a matter of economy and should not be omitted. So if it is desired to convert the vegetable deposite of swamps into manure, it may be readily and profitably done by alternating it in layers with hot dung. In this case one part of dung to three parts of swamp earth will suffice. A layer of dung five or six feet broad, and as long as necessary, is first deposited on a proper piece of ground, then a layer of earth over it, and in this way alternate layers should be added until the pile is five or six feet high. As soon as the mass gets into a state of fermentation, which may be ascertained by plunging into it a stick for a few moments, and ascertaining thereby its heat, the compost is fit for use. This will require weeks or months, according to the temperature of the weather.

It will be perceived that composts in which no fermentation takes place, can be of little advantage.

There is no volatile matter to be given off, and no tendency exists to break down and render soluble ligneous and woody matter. Lime operates more powerfully than dung in inducing

fermentation in vegetable matter, though it is not prudent to use it in combination with stable dung; I have found by experience, that it causes a too violent action, and dissipates nearly all its fertilizing properties. Composts are particularly adapted to all the family of small grains, and for top dressing grass grounds, where this latter practice is tolerated. Mere earthy matters add nothing to the compost pile; they merely prevent the waste of other materials which compose it. In making composts, therefore, for field use, earths should be preferred which abound in vegetable matter; and the litter, vegetable refuse, urine, soapsuds, ashes, &c. should be added, which are ordinarily wasted, and which form annually a large aggregate upon a farm.

ART. LXXIV.—*Ploughing in Cornstalks, the cheapest mode of using them for manure; by* J. H. S.

[FROM THE FARMERS' REGISTER.]

[The several operations of carting our cornstalks to the barnyards, converting them to manure, and then carrying them to be restored to the soil, require so large a portion of the labour of good farmers, and are so generally neglected by others, that it would be a most desirable result to obtain the same benefit for the soil by much less labour. There can be no doubt of the great diminution of labour by the practice described in the following letter, of ploughing in the stalks, whole and unrotted, before sowing wheat. The doubt is, whether the soil receives equal benefit, and whether there may not thence arise some positive damage to the wheat crop. If the practice is beneficial as late as wheat is usually sown, it must be more so earlier, when the stalks retain much of their sap: and therefore, it would suit well to be used in conjunction with the plan of gathering corn before it is dry, as described in No. 1, of the Farmer's Register. —*Ed. Far. Reg.*]

"Kennon's, Amelia, November 19th, 1833

Dear Sir,—I will with great pleasure answer your inquiries respecting my method of ploughing in cornstalks—but feel somewhat ashamed that the only communication made for the Register, by me, should be on the subject of *constalks*. The saving of labour in cutting down the stalks before gathering the

ears, as detailed in my former letter, I deem of great importance, and regret that so few farmers have been prevailed on to adopt it. I assert as the result of *experience*, that if six hands be necessary to cut down and pick up corn, on the old plan, so as to keep ahead of your ploughs, that of four *inexperienced* hands, can, with the short helved hoe, do it, and with three days experience, three will do the same with ease. But to return to the subject of ploughing in cornstalks. If the corn has been cultivated on a smooth surface (I mean without beds,) after gathering the ears, the stalks are cut with a long helved hoe, so as to cause them to fall promiscuously over the land. We commence ploughing (say with four two-horse ploughs,) a large land; (around the hill, if there be any) after going round twice, one active boy or girl follows the ploughs, picking up *only* such stalks as remain uncovered on the *ploughed land*, and laying them in the furrow of the last or hindemost plough, to be covered as the ploughs come round again. If your ploughs turn well, and the land be not very grassy, I think they will cover three-fourths of the stalks, leaving only one-fourth to be picked up, and laid in the furrows. I very frequently sow the wheat before ploughing, (guarding against covering it too deep,) and level the land with a bush or light log. If the land be ploughed before sowing the wheat, we harrow, of course, the same way the land was ploughed, to avoid pulling up the stalks.

If the corn has been planted on beds, we use the short helved hoe, in cutting the stalks, and lay them in the water furrow, to be covered by the ploughs. The information here given, is designed for your own use. After having tried the system, if approved, your recommendation would have more influence, than fifty of mine. I think the stalks thus managed, improve the land. I am sure you derive all the advantage that the stalk itself possesses.

The communication of Mr. Bruce in the last Register, I deem of more importance to the country, between tide-water and the Blue Ridge, than any article heretofore published by you. I have been practising the horizontal ditching for several years, and have no hesitation in saying, if the system had been adopted fifty years ago, that that section of the country, now, would be worth fifty per cent more, than it is. I had designed a communication for the Register on the subject, connected with the planting and cultivation of Indian corn—but if his, had not rendered mine, unnecessary, a communication in the last Register, signed E. R. in which five or six ploughings, and three or four hoeings are directed, would have deterred me.* After

* Our correspondent has mistaken the purport of the piece he refers to: but even if otherwise, any incorrect opinions previously presented to our readers, would make statements of better practices so much the more desirable.—*Ed. Farm. Reg.*

planting, I never plough the land but twice, and this year, used the hoes but once. You will perceive from the many interlineations that I have written in great haste. It is now ten o'clock at night: I cannot copy. You have my best wishes for success in your laudable undertaking; and the proffer of my feeble, but zealous efforts to serve you as you may direct.

Very respectfully, your friend,

J. H. S.

Art. LXXV.—*English Turnips.*

[FROM THE COMPLETE FARMER AND RURAL ECONOMIST.]

Every farmer will find it profitable to raise a quantity of these roots. The Mangel Wurtzel and the Ruta Baga, useful as they undoubtedly are, will not completely supersede, nor altogether supply the place of the old fashioned English turnip. In the memoirs of the Board of Agriculture of the State of New-York, we find the following remarks on the best mode of cultivating this valuable root.

"There is no difficulty in raising turnips on new land; but it is very desirable to know the best mode of raising them, at least a small patch every year, on old farms. Mr. Henry De Bois, of this county, [Rensselaer,] and Major E. Cady, of Columbia county, say, that they have succeeded in obtaining good crops several years in succession by the following process. Turn over a turf of old sward the first week in June. Yard your cattle at night on this, in the proportion of six head at least to a quarter of an acre, until the 20th of July. Then harrow lengthwise the furrows so as not to disturb or overturn them, and sow in proportion of about half a pound of seed per acre.

"If it is not convenient to yard cattle upon it sufficiently, about two inches of well rotted manure harrowed in as above, will do as a substitute. Mr. C. R. Colden applies the manure by strewing it in shallow furrows two feet apart, then buries the manure by two side furrows, and harrows the ground level, lengthwise of the furrows. This method requires less manure, and he has the advantage of hoeing the turnips in drills."

We recollect, likewise, that we have read in several of our New-England newspapers that fine turnips have been raised by

ploughing up old sward ground, some time in June, harrowing well and sowing from the 1st to the 20th of July, and this without the application of manure. But there can be no doubt that folding sheep or horned cattle on the land thus ploughed would very much enhance the crop.

All American writers on this subject, whose works we have perused, advise to sow seed of the common English turnip as late as about the middle of July. They tell us that the late sowed turnips are much the best for the table, and that they are less liable to be injured by insects, if sown so late, than when sown earlier in the season.

Turnips are frequently if not most generally raised in the United States as a second crop, and no doubt this practice is often very eligible, and may be perfectly consonant with the soundest maxims of good husbandry. But when it is intended to *make the most of your crop of turnips*, or to obtain as great a product as possible for the purpose of feeding cattle, we do not perceive any objection to giving turnips a larger portion of the season to grow in, than has been with us the general practice.

An English writer on Agriculture, whose remarks on this and other agricultural topics appear to us to be judicious, and to display a thorough knowledge of the subjects of his essays, says, "It is not pretended that there lies any solid objections to early sowing of turnips, simply considered; on the contrary, such seems to be the most proper mean of obtaining a full crop; but the advantages of early sowing, whatever they be, are given up; and the season postponed from near three to five months by way of retarding the growth of the crop; that it may last to a later period in the spring, and receive less damage from the frosts than that to which it would be liable in its early maturity. The disadvantages attending this plan are a crop far inferior in weight to what might be obtained from the land; the very common risk of destruction from drought and fly. The weight and perfection of the turnips, being the objects, the land may be got ready for them as for any other early spring crop, and the seeds sown with the first warm showers. This will afford ample scope for re-sowing, should the first seed fail, of which, however, granting it to be good, and the land sufficiently fine, I believe there is scarcely any risk."

"As to any advantages of a crop previous to the turnips, nothing scarcely can stand in competition with the first crop of roots.

"The true turnip soil is a deep sand or sandy loam. Every gardener knows the proper time to begin hoeing turnips. In general, when the plants spread a circle of about four inches they are ready for the first hoeing. they are commonly left about a foot asunder. The second hoeing three weeks after the first."

Those who desire to go extensively and successfully into the culture should raise their own seed from the finest transplanted roots. An English cultivator says, "It is wonderful what a small quantity of seed suffices for an acre of ground, and indeed equally so how it can be delivered and spread over such a breadth. A pint might be more than enough, but it is usual to broad-cast a quart on an acre."

Dr. Deane's New-England Farmer asserts that "the quantity of seed sown on an acre is never less than one pound, frequently a pound and a half, and by some two." According to the same work, it is very necessary for the success of the crop that a heavy roller be passed over the field immediataly after harrowing in the seed, provided the ground is sufficiently dry, or as soon as it is in a fit condition. by this means the clods are broken, and much of the seed that would otherwise be exposed to birds, &c., will be covered, and the surface rendered smooth and compact thereby, and consequently more retentive of moisture, which will greatly promote the vegetation of the seed and growth of the plants.

If a quantity of lime were sowed over the field immediately after putting in the seed, it would probably preserve the crop against insects, and prevent the turnips becoming spongy, as well as increase their size. Unleached ashes, soot, and plaster, have also been highly recommended as manure for turnips. Thomas Melleville, jun. Esq. of Pittsfield, Mass. in raising a crop which received the premium from the Massachusetts Agricultural Society in 1817, and which amounted to about 750 bushels to the acre, sowed his seeds in drills of twenty-eight inches the 21st of June, on ground previously well manured. The following day sowed on the acre thirty bushels slacked lime and fifteen bushels house ashes.

What we have said about the *early* sowing of turnips we would merely suggest as a hint, or something to be thought of, and perhaps become a matter of experiment. It appears to us that our custom of sowing turnips so late in the season, as is commonly practised, is an usage borrowed from the British husbandry without duly considering the difference of our climate from that of Great-Britain, and the different uses to which this crop is commonly applied in the two countries. In England they feed turnips off the ground with sheep; or draw them for neat cattle during the winter as fast as they are wanted, and often let them stand in the field till spring, to supply green food for sheep at the time of their yeaning, &c. But in the United States, this crop must be harvested in autumn and secured from frost; and it would seem to be desirable that they should have had time to obtain their full growth before they are gathered.

"Ellis, an old writer on husbandry, says, 'Turnips sooted about 24 hours after they are up will be entirely secured from

the fly.' Some advise, and it may be well, if not too much trouble, to leach soot and sprinkle young turnips with the liquor. M'Mahon, in treating of the cultivation of turnips, says, 'the plants should be left from seven to twelve inches every way; this must be regulated according to the strength of the land, the time of sowing, and the kind of turnips cultivated; strong ground and early sowing always producing the largest roots.'

"The width of the hoe should be in proportion to the medium distance to be left between the plants, and this to their expected size.

"The critical time of the first hoeing is, when the plants, as they lie spread on the ground, are nearly the size of the palm of the hand; if, however, seed-weeds be numerous and luxuriant, they ought to be checked before the turnip plants arrive at that size; lest being drawn up, tall and slender, they should acquire a weak and sickly habit.

"A second hoeing should be given the leaves are grown to the height of eight or nine inches, in order to destroy weeds, loosen the earth, and finally to regulate the plants; a third, if found necessary, may be given at any subsequent period.

"Here will the farmer exclaim against the expense and trouble of hoeing; but let him try one acre in this way, and leave another of the same quality to nature, as is too frequently done, and he will find that the extra produce of the hoed acre will more than compensate for the labour bestowed.

"Loudon says 'Arch. Garrie, a Scottish gardener of merit, tried steeping the seed in sulphur, sowing soot, ashes, and sea sand, along the drills, all without effect. At last he tried dusting the rows, when the plants were in the seed-leaf, with quicklime, and found that effectual in preventing the depredations of the fly. 'A bushel of quick lime,' he says, 'is sufficient to dust over an acre of drilled turnips, and a boy may soon be taught to lay it on almost as fast as he could walk along the drills. If the seminal leaves are powdered in the slightest degree, it is sufficient; but should the rain wash the lime off before the turnips are in the rough-leaf, it may be necessary to repeat the operation, if the fly begins to make its appearance.'"

Art. LXXVI.—*Ruta Baga and Mangel Wurtzel; by* J. S.

[FROM THE GENESEE FARMER.]

As I have cultivated these roots more or less every season, for the last twenty years, I suppose a short account of my practice may be acceptable to such as are now commencing.

Three times ploughing, with a harrowing and rolling after each, puts the ground in complete order to receive the seed of the ruta baga, which should be sown immediately after the last ploughing—the longer time the ground lays between each ploughing the better, so that the grass and weeds do not grow large, say not less than a month.

The time of sowing may vary according to circumstances and convenience—any time from the first to the end of the seventh month, (July,) will do for ruta baga in this latitude. If I wanted the roots for table use, I should not think of sowing before the middle of the month—if for cattle, it might do to sow the beginning; but I may remark that most of the failures I have noticed have been in consequence of too early sowing on land not well prepared; for, though turnips do not require a very rich soil, it should be perfectly mellow, and every particle of grass or perennial weeds ought to be entirely dead before the seed is sown. Thus the hoeing and weeding is performed with far less labour than would otherwise be required, and the roots will grow quick; this they must do to become sound and well flavoured.

I have usually put on about six or eight two horse loads of dung previous to the first or second ploughing, as most convenient. This, however, is not necessary if the ground is naturally rich, or has been in grass for some time.

The method of sowing in rows is the best, in my opinion. I have tried various distances for the rows, from two to four feet—the former is decidedly too close, and the latter distance may be thought two wide; but I have found the bulk of crop greater on four feet space than on two feet; at any rate I think it a positive loss of labour to sow closer than three feet. This leaves room for a cultivator to pass between the rows. The plants should be thinned so as to leave one in a foot; it is important that this should be done as soon as the plants are large enough to resist the attacks of the turnip fly. The crop will be much diminished if this is not attended to, especially when vegetation is rapid. One pound of seed is amply sufficient for an acre if sown in rows—if broad cast, the same or rather less will suffice, on account of the increased difficuly of hoeing and thinning.

The common English turnip I consider but a very poor root to cultivate for cattle; but if managed as above directed for ruta baga, except to sow the seed two or three weeks later, very heavy crops could be raised; but I think mangel wurtzel is the most

valuable root for cattle. It is a trifle more expensive to raise it—require to be sown about a month earlier than ruta baga—is not so easily preserved through the winter, and requires rather a richer soil. On the other hand, it thrives best on soils too heavy for the turnip—the bulk of crop is greater—it can be sown to advantage after one ploughing, and is never eaten by insects as turnips are. Thus being a very certain crop, it received the name of root of scarcity, meaning, I suppose, that it never failed in times of general scarcity. Cattle, sheep and hogs, prefer it to any other root that I have ever seen, after they become used to it. Two pounds of seed will suffice for an acre, in rows three or four feet apart. I have always been sensible of a loss of time and labour, when I have plaated this crop closer than four feet by fifteen inches from one plant to another. It is a gross feeder, and I believe no soil can be too rich for it, but it will amply repay the labour bestowed on it. I have raised them weighing twenty-five pounds each, and believe there was one of these roots exhibited in London weighing 42 pounds.

Lastly, I may just say how I proceed with the work of sowing the seed, which, for each kind, does not vary much—having no drilling machine, I get a piece of plank or slab six feet long, more or less, according to the distance I intend to have the rows—saw out three blunt teeth, one at each end and one in the middle—put a long handle in the centre, and draw this thing over the ground cross-ways of the last ploughing, letting one outside tooth go in the last marked row, thus making two rows every time. To expedite the sowing, I mosten the seed a little, and add a little lime or some white substance. This makes it easy to see how thick I sow it, and enables me by going at a quick step, to put in several acres in a day if required.

J. S.

Owasco, 5 *mo.* 7, 1834.

Art. LXXVII.—*On the Culture of Onions.*

[FROM THE GENESEE FARMER.]

I have raised onions several years in succession on the same bed; but I have had none so fine as those of the present season. The kind which I have cultivated is called "the top onion; and my former practice was to keep the 'sets'" over winter and

plant them out in the spring. Last fall I adopted a different method. Instead of stowing them away in the house, I set them out at once, and found them to winter best in the garden. I am satisfied, however, that they ought to be well rooted before the approach of severe weather: and this year, I intend to have them in the ground before this note can appear in the *Genesee Farmer.*

I have planted "the top onion" in clumps, and also at different distances. Those that grew close together, have in no case been so fine as those that stood three or four inches apart. The bulbs in the *head* ought to be always separated before planting.

By planting early in autumn, onions will be fit for use the next season, a month or two sooner than if planted in the spring,—which is a great convenience.

Some have insisted that a rotation of crops ought to include onions: while others have been satisfied to sow or plant them, year after year on the same ground. In favour of the latter practice, it may be remarked that onions require a soil rather different from common vegetables—that is to say, *shallow* but *rich;* and one piece of ground so appropriated can be most conveniently kept in that state; for as soon as the crop is taken off, it may be manured, well hoed, raked over, marked out and planted again without delay. And that such lands do not deteriorate, is evident from the fact that with a very slight dressing, the crops have been found successively to increase. The crop that gained the premium of the Massachusetts Agricultural Society in 1830, was estimated at 657 bushels; and it grew on an acre which had been cultivated with onions several years.

"The top onion" is only a variety of the common kind; and some bear bulbs, some seeds, and occasionally I find one which bears both bulbs and seeds. I destroy the young stems when there are too many shooting up through the patch; but if they are not destroyed, they will produce tolerable onions. When I gather the crop, I take up altogether, separating the onions from the stems.

Art. LXXVIII.—*Planting Fruit Trees: by* O. Fiske.

[from the new-england farmer.]

Mr. Fessenden,—Your correspondent M. of Maine, asks for information respecting *the proper course to pursue in planting fruit seeds and stones.* You have assigned sundry reasons for their failure, but the true one I apprehend has not been stated. From long experience on this subject I have found that the action of a severe winter frost is essential to their vegetation. If this doctrine be correct, the depth of snow remaining through the winter on ground not previously frozen, as was the case here, and probably in Maine, was a sufficient cause for the failure. Whether the action of frost in itself conduces to the vegetation of this kind of fruit, or whether it only facilitates it by preparing the envelope to give way to the imprisoned seed in its efforts to obtain heat and light, which are essential, are questions which I cannot with confidence determine. I have cracked stones that had been secured from frost and planted them in the spring, when no vegetation ensued. Perhaps they had been kept too dry. I intend to renew the experiment with some I have reserved for the purpose in a moist cellar. In planting fruit seeds and stones, my custom has been to excavate the surface, and throw the stones into the cavity when the earth is moist, and cover it with a board, or what I have found better, to put them into some shallow vessel level with the surface and cover it with a thin sod. After preparing my ground in the spring I crack the stones, and lightly cover them in trenches. On account of the great prevalence of the wire worm, I have some seasons omitted to crack the stones, that the seed might be longer protected by the shell. Not a dozen where I expected a thousand made their appearance, in this case last spring. After a frosty winter, I have not found it useful to disturb the shell. This failure I consider a suspension only, with but the loss of one year's growth, as we may calculate from present appearances that there will be frost sufficient before next spring to open the shell.

For a few years past I have an additional method. After saving the stones from the fruit consumed, for the purpose of planting, as above mentioned, (Dr. Darwin's pulp I consider of no use) I tread into the earth what remains under the tree. These stones I find will vegetate from ten to fifteen days sooner than those otherwise managed, and become much larger and more vigorous. When the stem is a little hardened I take them up with a trowel and transplant them in the nursery. I am now mostly dependent on the birds for my mazzard cherry stocks. Two years ago they furnished me with two thousand trees which

grew two feet in height the first season, and furnished trees sufficiently large for budding.

Respectfully, your friend and servant,

O. FISKE.

Art. LXXIX.—*Mr. Coke—Devon Cattle.*

[FROM THE NEW-YORK FARMER.]

Those who are exerting themselves to improve the husbandry of the country should not, on reading the following remarks of one of the best judges of cattle in England, the Rev. Henry Berry, be discouraged:

It is now about forty-two years since Mr. Coke, very properly considering the difficulties he had to encounter on his light poor soil, began to breed Devon cattle, and it is not a little creditable to his judgment that he has, during that period, scarcely referred to any thing which may, properly speaking, be called a cross—certainly, to none of which he could permanently avail himself—and yet his Devons, take them altogether, are by far the best I have ever seen. I much doubt whether the county of Devon can produce such an animal as one of Mr. Coke's bulls. I am totally free from prejudice on these matters, and, therefore, candidly admit the ox in question to have been, in my judgment, at the time I saw him, the most *complete* I ever put my hand on.

The dairy of Devon cows appear to be, and I am assured is, highly productive, each cow, no matter what her other excellencies, being rejected which proves a bad milker. They present great uniformity of character, with all the genuine distinctions of the pure North Devon cattle, and, with great aptitude to fatten, possess precisely the compact bodies and short legs, which constitute the *multum in parvo* I have so often advocated. Much as I admire the Norfolk husbandry—much as I have seen to admire in the zeal of Mr. Coke's tenantry to evince their gratitude and respect, there are two things which I must censure and deplore. While the judicious and spirited improvements in tillage of this great landed proprietor have been forcing conviction, and obtaining adoption, his efforts as to the stock of the country have been comparatively vain, and he stands alone, a solitary instance of a man who for forty-two years has produced proof, and invited investigation into the merits of his Devons—

has offered and committed costly sacrifices to carry his useful objects, without, except in few instances, being able to induce his tenantry to adopt a profitable breed of cattle, for an unprofitable one—a system o economy devoted to the most useful end, in lieu of a system of extravagance, purchasing its advantages at a rate beyond all chance of remuneration. With, as I said before, few exceptions, the miserable and unthrifty home-breds are the cattle kept; generally speaking, little or no regular stock of cattle is maintained, and during the present year, in the month of September, short-horns, (so called,) and every wretched specimen conceiveable of all that is bad, were consuming oil-cake in the yards, for the purpose of converting the straw to manure. On this subject Mr. Coke feels, and well he may, much disappointment, but it is not confined—this blindness to their true interests—to the article of cattle alone. In sheep it is the same; and prepared as I am to show, hereafter, that no breed in the island now equals, in profit, that of Holkham. I shall only here observe that so far behind the rest of the world are the majority of Norfolk men on the subject of stock, that they appear to select with a view to obtaining those qualities which well-informed men would pronounce bad, and invariably reject.

Art. LXXX.—*Selecting and Breeding Cattle.*

[FROM DICKSON'S CATTLE MANAGER.]

The change which is capable of being made in any breed of animals by judicious and proper selection, is such as can scarcely be conceived, except by those who are sufficiently experienced in the business, as the beneficial consequences of it are supposed to arise from other causes. It is evident, that for the purpose of breeding from, no animal can be fully depended upon, unless it be really good in itself, and have, in addition, been quite well bred in all the several stages of its ancestry.

As all the breeds and varieties of animals, while in their natural state, and before they have undergone any of their beneficial changes of art, are defective in some respect or other, and as individuals of the same breed are very differently formed and proportioned in their several different parts, care should be taken to select from whole herds, flocks, or collections, such only as are early in com-

ing to perfection, and have other desirable properties, which give them superiority over others in the views of the breeder. Then, in proceeding with the produce even of these parents, the best and most suitable in every respect of each sex are to be further selected and taken as the future improving stock, while the remaining inferior portions are steadily to be refused as improper; and by thus rejecting every animal that is bad, inferior, or unfit for the purpose, great improvements and advances towards perfection in the breeding of animals may be made.

As the offspring that is produced by "some animals is very unlike themselves," it is "a good precaution to try the young males with a few females, the quality of whose produce has been already ascertained:" as in this way and by this kind of selection, "the sort of stock produced, and the description of females to which they are the best adapted," will be the most certainly known, and of course the practice afterwards will proceed in the most perfect manner. Proper selection in breeding and providing male stock has tended to produce the greatest improvement in every kind of animals to which it has been applied.

There can be little doubt but that by this mode of selection in the practice of breeding, every desirable property in all kinds of animals may be promoted and improved. But the selecting for one single property should be avoided as much as possible.

The nature of the qualities and properties that prevail in any particular breed or family of animals, so as to form its excellence in the view of the breeder, will be considered and explained under the different proper heads.

Breeding in and in.—This is the practice of uniting the perfections of the same kind by continuing the breed from the best animals of the same line, family, or blood. It is founded on the notion that crossing is wholly unnecessary, and that animals are degenerated by being bred in this way. Bakewell contended that the best sorts only ought to be bred from, which cannot be disputed, though it is to be ascertained what the length of time may be that the same family *bred* in such a manner will hold out to be the best; but since his time considerable change of opinion on the matter has taken place. The practice had, however, the effect of rooting out the ridiculous and mischievous prejudice, that was before entertained, against breeding from animals that possessed any degree of affinity between each other.

It was a practice which was believed, under careful and expert management, to afford the greatest security for attaining the improvements that were wanted, with the least risk of producing injury. It has been supported on the principle that good stock has been produced by it, not only without any sort of deterioration, but with continued improvement; and that many breeds of cattle and other animals which have remained for vast lengths of time in the state of nature, in certain situations, without any

intermixture of others, although from their unrestrained condition they doubtlessly must have bred in all the different degrees of affinity, have nevertheless been found to continue without any sort of degeneracy or any injurious alteration whatever having taken place in them.

At the same time it must be remarked, that the trials that have been made of this method have not been very considerable; it being conceived as principally applying to perfect animals only, the existence of which is to be considered as doubtful.

Probably there never did exist an animal without some defect in constitution, in form, or in some essential quality; and a tendency at least to the same imperfections generally prevails in different degrees in the same family. Thus "by breeding *in and in*, this defect, however small it may be at first, will increase in every succeeding generation; and will, at last, predominate to such a degree as to render the breed of little value." It is indeed conceived, that by proceeding in this manner, the animals would at length fall into such a state of degeneration as to be *wholly* incapacitated for breeding. But the bad effects of this practice of breeding may be hastened or retarded by selection, especially in such animals as breed numerously at once. And it is conceived that "there may be families so nearly perfect as to go through several generations, without sustaining much injury from having been bred *in and in;* yet that "a good judge would, upon examination, point out causes why they must ultimately fail, as a mechanic would discover the weakest part of a machine before it gave way." The practice of "breeding *in and in*, will of course have the same effect in strengthening the good as the bad properties, and may be beneficial, if not carried too far, particularly in fixing any variety which may be thought valuable."

Extensive correct trials, made upon different animals, in breeding *really* and perfectly in this method, have fully shown that they decline greatly in size, become badly formed, and breed in a bad manner; at the same time that they are capable of having some particular property, for which they are considered valuable, so increased by it, that it becomes overabundant as to be inconvenient and disadvantageous: and such has been the case with new Leicester breed of sheep, where the very important propensity to get fat has been carried too far, and they have become in consequence small in size, tender, productive of little wool, and bad breeders.

So also, by selecting animals for one property only, the same effect will, in some degree, be produced as by breeding *in and in.* Animals with the wished-for propensity in great perfection will be gained, "but so deficient in other respects, as to be upon the whole an unprofitable stock." It should consequently be the

aim of those engaged in breeding stock to obtain all the properties that are essential to the animals, as too much may be sacrificed even to a quality which is the most desirable, as has been just observed in the instance of the new Leicester sheep.

In breeding rather *close*, indeed, in this practice, as from the brother and sister, if each of them be very good, and especially if the same defects or faults should not prevail in both, "but the perfections of the one promise to correct in the produce the imperfections of the other," it cannot, of course, be objectionable; but "much further than this the system of breeding from the same family cannot in general be pursued with safety." It is probable, that the best animals are constantly raised where the practice is not carried on in too close a manner in relation to blood.

In respect to animals in the state of nature, many causes combine to prevent them from degenerating; "they are perpetually intermixing 'between themselves,' and therefore do not feel the bad effects of breeding *in and in:* the perfections of some correct the imperfections of others, and they go on without any material alteration, except what arises from the effects of food and climate."

Further, "the greatest number of females will of course fall to the share of the most vigorous males; and the strongest individuals of both sexes, by driving away the weakest, will enjoy the best food and the most favourable situations for themselves and for their offspring."

And a "severe winter, or a scarcity of food, by destroying the weak and unhealthy, has all the good effects of the most skillful selection. In cold and barren countries no animals can live to the age of maturity but those which have strong constitutions; the weak and the unhealthy do not live to propagate their infirmities, as is too often the case with our domestic animals." It is to these causes that "the peculiar hardiness of the horses, cattle, and sheep, bred in mountainous countries," are to be ascribed, "more than to their having been inured to the severity of the climate; for our domestic animals do not become more hardy by being exposed when young to cold and hunger: indeed animals so treated will not, when arrived at the age of maturity, endure so much hardship as those which have been better kept in their infant state."

It will be found very beneficial in case only a single male and single female of a valuable breed could be provided to have "the offspring separated and placed in situations as dissimilar as possible; for all animals kept together are subject to the same effects of climate, food, and mode of treatment, and consequently to the same diseases, particularly to such as are infectious, which most accelerate the bad effects of *breeding in and in.*" But it is presumed that "by establishing the breed in different places, and by selecting with a view to obtain different properties in these several

colonies, the breed may be kept up for some time without the intermixture of their blood."

These circumstances, regulations, and directions, in regard to the practice of breeding in the same line of blood, if closely attended to, cannot fail to produce many very important and useful effects, and must tend to render this manner of raising animal stock much more certain.

Art. LXXXI.—*Preserving Bacon.*

[FROM THE NEW-ENGLAND FARMER.]

Among the best flavoured dishes that grace the bounteous tables of this country, bacon or ham, ranks, if not the first, certainly inferior to none.

To make good bacon the meat should be hung with the thickest part upwards, to prevent the exudation of its juices, and each piece clear of the wall, or other pieces, and there left until it is quite dry. Some sound chips, with a few billets of hickory wood or corn cobs, make the best smoke, and also keep the house warm, which is important; for if the smoke-house is cold, all former care will be in some measure lost; a damp will settle on the bacon, and it will have a bitter flavour. Bacon should never be smoked in damp weather, as is too often practised, as by it the meat gains nothing in colour, but acquires a bad taste; one or two good fires each day will smoke the pieces, in precisely the same time required for salting, that is to say, hams four weeks, shoulders three weeks, and midlings and other pieces two weeks.

I have used red pepper, with, I think, decided advantage, by throwing a few pods into each fire while smoking; this article, in salting or smoking, or in both, improves the flavour of the meat, and tends to secure it against insects. If the meat-house is dark and cool, the meat may be left hanging until wanted for use; but if otherwise it should be taken down at the commencement of warm weather, and packed away in salt, clean hickory ashes, or oats; either will secure it from insects or dripping, if the meat is entirely covered over, and the interstices between the pieces properly filled. The use of dry salt will not increase the saline flavour of the meat. I have known bacon very finely

preserved, by preparing a strong ley of wood ashes, concentrated by boiling, into which when cold the pieces were dipt.

The alkali and the oil of the meat form a coating of soap in all the crevices, as well as on the surface, which is an admirable protection against the insect tribe.

Some attention should be paid to the construction of the smoke-house. As before observed, it should be rendered warm during the process of smoking, and if it is to retain the meat through the season, should be cool, dry and dark. A brick stove in the centre of the floor with openings for the escape and assent of the smoke in the sides, is among the best contrivances usual amongst us; but this becomes heated, and does not entirely obviate the danger arising from the occasional falling of the meat, by which houses are not unfrequently burned. It will probably be more safe and convenient to build a chimney with a very low fire place, as for a sitting room, and when the chimney is carried up four feet and closed at the top. A small grate placed a few inches from the hearth, will assist the burning of the wood. By having a chimney thus constructed the blaze of the fire can never injure the house or meat; no pieces can fall into the fire when a nail or string gives way, and whilst the blaze and smoke ascends the blind chimney, the smoke must descend again and pour into the smoke house. This plan is highly recommended for its safety and convenience, by a gentleman whose advice is entitled to great respect, and to whom I was originally indebted for several of the directions here given, the value of which I have verified in the course of my own experience.

AN ADMIRER OF GOOD BACON.

Art. LXXXII.—*Poultry Houses.*

Poultry houses require no particular form or magnitude; because, the animal being small in size, there is no necessity for accommodating the shape of the house to its particular figure. Both terrestial and aquatic poultry agree in requiring a dry and rather warm lodging; and they differ, in that the web-footed birds all roost on a flat surface, while gallinaceous fowls roost best at some height from the ground, on roundish horizontal rods or rails, of a size suitable for being grasped by their claws,

but neither perfectly round nor perfectly smooth. All fowls, when in a state of incubation, require repose, to which darkness is favourable as well as solitude; and places where they can have these requisites must be provided for them, as well as separate places for fattening them; to which also solitude and darkness are congenial. Poultry of every description, while growing, are exceedingly active, and, in an artificial state, require a considerable extent of yard to enable them to take sufficient exercise for health. The variety of their food is also considerable, including not only animal and vegetable matter, but even, as a help to digestion, salt, sand, or small pebbles. As land poultry require a dry yard, so aquatic poultry requires ponds; and, while the common hen will roost at the height of a few feet from the ground, the turkey and the peacock prefer the highest trees. It must be evident from this variety in the nature of these animals, that every kind will require a separate house or compartment of a building, and that his house or compartment should be four divisions; one for rearing, another for keeping fullgrown fowls, another for incubation, and a fourth for feeding. For the first two of these houses or divisions, a yard for the purpose of allowing the fowls to take exercise and pick up food is essential, and in this yard there ought always to be an open shed for shelter from the sun or rain, abundance of sand, and small pebbles; and, for aquatic fowls, a large pond. The healthiest poultry of every description are, those which are well fed in their yards in the morning, and allowed free exercise out of them the greater part of the day; and the fattest poultry are those which are confined in the dark, and not allowed to take any exercise. In all cases where poultry have not the free use of a large yard, they should have troughs filled with sand and small pebbles, placed so as to allow them to pick them when they choose, to promote digestion. These being the general circumstances connected with domestic poultry for architectural purposes, they may be classed in the three following divisions: viz. the web-footed or aquatic, which must necessarily, for every kind of treatment, be lodged on the ground floor; the common cock and hen, which prefer the floor above; and the turkey, guinea fowl, and peacock, which roost in lofty open sheds, or on trees. In small farms, therefore, all the different kinds of poultry may be lodged in the same house. Ducks and geese, with the other kinds, while rearing, on the ground floor; common fowls, when full grown, and while in a state of incubation, on the middle floor; and the turkey, &c. above. One yard may answer for the whole, provided it be sufficiently large, and contain a large pond. As warmth is highly conducive to the prosperity of poultry, common fowls are frequently lodged above cow-houses or stables, or even pigsties, and in other cases, when it is very desirable to cause hens to lay early in the season, their houses are heated by flues.

When, however, the house is of a construction well calculated to retain heat, and it is perfectly dry below, and has few openings above, and a roof sufficiently thick to exclude all frosts, artificial heat can very seldom be necessary. When it is desired to rear chickens for sale very early in the season, the eggs may be hatched by hot water, or in a bed of tan, dung, leaves, or other fermentating matter; and, after being hatched, they may be reared under a roof of glass, which roof may be employed in the summer season as a covering for vines. At Bagshot Park, Surry, there is a very extensive poultry establishment; and early in the season the fowls are reared in a vinery; and a writer in the *Gardner's Magazine*, (vol. viii.) not only rears, but hatches, in a house of the same description. In the centre of the large yard at Bagshot, there is a tree partially denuded of its branches, in order that it may serve as a roosting-place for the turkeys. In every poultry house the places for incubation are small stalls or boxes, eighteen inches for two feet square, and open in front, in which the fowls sit on the eggs, and, after these are hatched, they are taken out into the yard, and the mother is confined in what is called a coop, an inverted cup of wickerwork, with the interstices large enough to allow the young brood free egress and ingress, while the parent cannot escape. These coops are frequently boarded on all sides, with a grated door opening in front. Partridges, pheasants, quails, bustards, and other gallinaceous birds are sometimes bred and reared in artificial structures, with a view to their domestication or increase in any particular locality. When this is the case, it is necesary to enclose them above and on all sides by netting, to prevent their flying away; because these birds are not susceptible of perfect domestication.

Art. LXXXIII.—*Improved System of Bee Management.*

[FROM THE NEW-BEDFORD COURIER.]

The first part of Mr. Nutt's plan of operation is, to have the hive, into which the stock is introduced, untouched. When it is filled with honey, (the contents of which are to be reserved for the use of the bees,) the capacity of the hive is increased by the addition of another box to the side communicating with the hive by apertures, which give free admission to the bees in all parts of the box.

The next important object in Mr. Nutt's system is, to insure a regular and uniform temperature in this portion of the hive, without diminishing the temperature of that which contains the stock. The ventilation necessary for this purpose is effected by the means of a perforated tin tube, extending down to a considerable distance from the top into the hive, and connected with an aperture at the bottom, which may be partly or wholly closed by a tin slide, thus modifying the circulation of the air and consequent degree of temperature. The temperature of this side box, which is indicated by a thermometer introduced into the tube, ought to be 70 degrees, which is the natural temperature of the working hive; but in that which contains the stock, a temperature of 90 degrees is necessary, as well for the incubation of the queen bee, as the maturity of the young. The parent hive is, then, as well the residence of the queen bee as the nursery of the young, whilst the side boxes are but additional store-houses for the reception of the superfluous honey, which may be taken away without impoverishing the stock, or robbing them of their winter sustenance.

When the thermometer placed, on the side box rapidly rises to 90 or 100 degrees, the necessity of again providing the bees with fresh room is indicated; and this is effected by establishing another box on the opposite side of the hive. The bees, finding an increase of room, will readily recommence their labours in this new apartment.

Then follows, in Mr. Nutt's system, the operation of separating the bees from this second hive. This is effected by the ventilator, by which the internal temperature of the hive may be reduced to that of the external atmosphere; and when on the approach of night, the bees, recoiling from the cool air, go back into the middle box, the connexion between the two may be closed, and the full hive withdrawn, without the imprisonment or destruction of a single labourer. The same arrangements are again renewed, as the bees continue their successful labours. In this system no provision is made for swarming, which cannot occur under this arrangement, the emigration of a part of the stock being only occasioned by a want of room in which the bees may pursue their labours.

The honey furnished under this system of management is found to be far superior, both in quality and quantity, to that obtained under any other arrangements. The honey and wax are as white as refined sugar. This superiority in quality it owes as well to the modified temperature at which the bees secrete their products, as to its total exemption from all extraneous animal and vegetable matters, and in particular from the pollen and bee bread, which is taken in considerable quantities into the stock hive for the support of the young. The superiority of the

honey is only equalled by the quantity of the supply; the usual annual supply from one stock is about one hundred weight of honey; whilst, in the course of one season, Mr. Nutt has procured the large quantity of two hundred and ninety-six pounds. This increase in quantity is owing to the excellent disposition of the arrangements, by which the industrious efforts of the bees are never retarded, nor their strength weakened at the time when the fruits and flowers abound from which their treasures are obtained.

Art. LXXXIV.—*Manufacturing of Silk.*

[FROM THE FARMER AND GARDENER.]

We have just been visited by a gentleman from the land of perpetual improvement who has given us the very agreeable intelligence that a machine has been put in operation in Connecticut for manufacturing silk; which accomplishes for that article all that his countryman, Whitney, effected by his gin for cotton. Every part of the operation, from the cocoon to the production of the most elegant tissue, suited to every kind of ware, such as ribbons, vests, and very superior silk for ladies' dresses, can be manufactured in this machine by the common operators in those trades, without the least difficulty. Specimens of which the gentlemen presented for our inspection, had been manufactured in this machinery. The inventor, we are informed, is a young man who was brought up in a cottton factory, and subsequently learnt, or perhaps we may say he studied machine making, in the common shop attached to the factory.

There was an Englishman in the neighbourhood, who had been weaving the silk raised in Connecticut, for the last eighteen years, with such an apparatus as is used in Europe for that purpose; but it appears he had caught a little of the Yankee notion, and thought his machinery might admit of improvement —he accordingly went to the young mechanic spoken of, and asked him if he could not make him something that would do better than his present looms. The young man, whose name is Gay, replied yes, he guessed he could, if he knew what he wanted. An inspection of the loom accordingly took place, and the young man went to work.

If our readers had been raised even in the centre of Connecticut, we do not believe they could guess how he went to work. He did not go to other shops to see how others worked—he did not take down the Encyclopædia and count the cogs, and pinions, and teeth, represented in the plates of the machines made use of in that country where the people presume nothing can be done in the world but by imitating them. No such thing—when this young mechanic goes to study out any new movement in machinery, he turns his eyes to the interior machanism of his own frame—and on this occasion, instead of proceeding in the way that mechinests generally would have done, he set himself down, and began to work his fingers—he observed how many movements he could perform with them, and how the inflections of the muscle operate to produce several motions, their origin, and insertion at the joints. He then proceeded to the consideration of the wrist, the elbow, and the shoulder, and proceeded to consider all the motions that the several joints are capable of performing, until he discovered a motion which corresponded with the one he desired to apply to his machine, and then he discovered how to apply the power to produce the desired effect —thus proving that

"The proper study for mankind is man."

This machine will cause silk to rival cotton in the list of our exportations, and that at no distant day. It has been ascertained that the raw material can be raised much cheaper than cotton and manufactured at half the expense.

A child of fourteen years old can climb the large white mulberry trees, which are as large as a common sized apple tree, and gather 75lbs. of leaves in a day—this is termed a day's work for a child in Connecticut. At this rate, in six weeks the child will produce 10lbs. of silk, the reeling will be two weeks work for the same child, making eight weeks work for 10lbs. of silk, which, at $4 per lb. (the market price,) will be $40. But it will be remembered that this is from the white mulberry, and those of a large size. If the *morus multicaulis* be substituted, which is a shrub that may be kept from 7 to 8 feet high, and produces a leaf when at its full size 10 by 10 inches; while that of the other kind is but little larger than a dollar. It will not be too much to say, that the child can feed three times the number of worms that has been mentioned in the above calculation; and experiment has proved that the same weight of leaves will produce one-fifth more silk than the white mulberry.

Admitting this, which no one acquainted with the two kinds of mulberry tree, will be disposed to deny, and the account will stand thus:

6 weeks labour of a lad or girl, - -	$6
2 weeks of the same for reeling, - -	2
8 weeks boarding same at $1 per week, -	8
	$16
Allowing the child to gather three times the quantity of leaves as of the other kind which makes 10lbs. of silk, - -	30lbs.
One-fifth to be allowed for the *morus multicaulis*, above what would have been produced by the other, - - - -	6 "
	36lbs.
At $4 per pound, - - -	4
Total, - - -	$144
Deduct expense of labour and board, - -	16
Balance, - - -	$128

It gives a balance of $128 for the labour of a child at that age for eight weeks. We have left out of account the rent of the land, as it would be but of small consideration, and cannot be ascertained.

We think we have said enough (if our statements are believed) to prove our declaration, that silk will in a very few years be produced in this country to supply our own consumption, and as an article of exportation will rival cotton in value, if not in quantity.

Before our readers pronounce upon us that word of awful import, visionary, we ask them to wait, and weigh the evidence which two years will produce on our side. We will continue to detail to them the interesting facts as they occur to us.

Art. LXXXV.—*On Silk; by* B.

[FROM THE SOUTHERN PLANTER.]

Mr. Editor,—As the culture of silk is becoming of considerable importance in our country, it may not be altogether uninteresting to some of your readers to present them a few remarks concerning its early history.

Previous to the sixth century, the art of rearing silk-worms was unknown in Europe. Some small quantity of silk stuffs had been

brought to the Italian States, from Asia, but only persons of the first rank were able to procure them. Some idea may be formed of their scarcity, and the great estimation in which they were held, from the fact that in ancient Rome, under Aurelius, A. D. 270, a pound of silk was considered equal in value to a pound of gold.

In the sixth century, Justinian introduced the art of rearing silk worms into Greece, which rendered the commodity somewhat more plentiful, yet the supply was greatly inadequate to the demand, and it continued an article of luxury and magnificence, reserved for persons only of the first order or for public solemnities.

This is the first of its culture in Europe, and it was not until the beginning of the twelfth century that it was carried into the neighbouring countries—a proof of the averse disposition of mankind to depart from the "beaten track of life." In the year 1130, Roger I. king of Sicily, carried off a number of artificers in the silk trade, from Athens, and settling them in Palermo, introduced the culture of silk into his kingdom, from which it was communicated to other parts of Italy. From this period silk increased in plentifulness throughout Europe, and in the sixteenth century silk-worms were introduced into this country. Thus, an article which was originally confined to the half civilized countries of Asia, has at length become diffused over Europe and America, promoting the comfort and prosperity of the people. B.

Art. LXXXVI.—*New Compost for Flower Pots.*

[FROM THE AMERICAN FARMER.]

I have from my childhood been passionately fond of horticultural pursuits—have devoted much time to ornamental gardening; and in my travels I have gleaned all the information in my power on the subject of fertilizing the soil. In the summer of 1824, I was in Albany, and visited Judge Buel's plantation, which was in the highest state of cultivation, and which as every one knows, is indebted to art for its fertility—having been *cut and made* from an entire swamp. I walked the whole ground over with the judge and his lady, and treasured up many curious facts relative to gardening, which I have since practised upon in a small way, with great success. Since that time I have also visited the most celebrated gardens in and near Boston, Hartford, New-York and Philadelphia; but in those places they have the advantage of naturally good soil, and do not require so much artificial

aid to produce large growth, of either esculent or ornamental plants, which is necessary, in order to procure the same growth from the less fertile soil in and around Baltimore.

Last winter, soon after my arrival in Baltimore, a friend presented me with an Oleander, which had spun up to an unwieldy height, but the leaves were very dwarfish; and yet small as they were, the stalk was so slender, as scarcely to be able to support the scraggy top. It looked so little like the broad leafed Oleanders I had seen at the North, that I almost doubted it being the same species of plant. About this time I saw in Messrs. Calvert & Ducatel's paper directions for obtaining large growth of cabbages, and I resolved to try the experiment on my dwarf leafed Oleander. Accordingly, as soon as the spring opened, I procured some common red earth which was of a very tenacious clayey consistence—spread it upon a wide board—overlaid it with a strata of lime, which I slaked—not with sea-water according to the directions, because I could not procure it—but with rain water into which I had previously put sufficient common salt to make it about like sea-water to the taste. I then laid another strata of earth, and then again of lime, making two of each, and the whole made moist with salt-water. I then added four quarts of river sand as an improvent of my own; for, although the receipt did not name it, I took the liberty to judge that so much clay as the earth contained would adhere again in a mass without the aid of sand or something to separate its particles. The whole measured about two-thirds of a bushel, one-third of which was lime and sand. A servant stirred it regularly for me every day until the ingredients were well incorporated, and in 3 or 4 weeks it had entirely lost its reddish colour and had become quite black. About the middle of April I cut off the top of the Oleander, down within two feet of the roots, and trimmed off all the ground shoots and some of the branches. I did not transplant it, as it grew in a large tub, but removed all the earth from the top and sides of the roots—at least half a bushel of it, and filled up the tub with the new preparation. It was then placed in the yard in a southern exposure where it has ever since remained subject to the sun and rain, and copious waterings from the pump as often as the earth became dry—and such a rapid and luxuriant growth I never witnessed. My friends told me at first that I had killed my Oleander—and I confess I had some misgivings as to the success of the experiment; but in less than two weeks after the application of the new earth, new leaves began to put forth surprisingly, and their enormous size and bright green lustre have been the subject of much comment among its numerous admirers. It is now in blossom, and on measuring the new growth which is easily ascertained by the increased size and brilliancy of the leaves, I find it to be now, the first week in July, just 16 inches. The main stalk and limbs have also increased in the same ratio.

PART III.

MISCELLANEOUS INTELLIGENCE.

Agricultural Society of South-Carolina.—At the Anniversary Meeting of the *Agricultural Society of South-Carolina*, on Tuesday, 19th of August, the following Gentlemen were elected Officers for the ensuing year:—

JOHN HUME, *President*,
HUGH ROSE, *Vice-President*,
CHARLES E. ROWLAND, *Secretary*,
HENRY F. FABER, *Treasurer*,
ELIAS HORRY, *Corresponding Secretary*,
JOHN S. BRISBANE, *Orator*.

The application of Steam to Agricultural Purposes is said to have called forth a powerful and effective engine in France; and it has, at the same time, produced a steam-digging machine in England. We have lately seen the model of a machine, which, at one operation, could be made to plough, pulverize, roll, sow, and harrow a breadth of 10 or 12 feet, at the rate of 5 or 6 miles, and, consequently, between 7 and 8 acres per hour. The machine might, no doubt, be impelled at double that rate.—*Gar. Mag.*

Inhabitants of an Oyster.—Observations with the microscope have shown that the shell of an oyster is a world occupied by an innumerable quantity of small animals, compared to which the oyster itself is a collossus. The liquid enclosed between the shells of the oyster contains a multitude of embryos, covered with transparent scales, which swim with ease; a 120 of these embryos, placed side by side, would not make an inch in breadth. This liquor contains, besides a great quantity of animalculæ, five hundred times less in size, which give out a phosphoric light. Yet these are not the only inhabitants of this dwelling—there are also three distinct species of worms.

To Fatten Hogs.—Shut them up, the fore part of September; fed them with dry peas, or corn; give them raw potatoes, but no drink. The grain creates an inward fever; the animal being uneasy from thirst, will chew the potatoes fine, eat them slow, and get the substance of them as well as if boiled. This has been my practice for years past. I give them, first, as much grain as they will eat; and after that, each grown hog will eat from 6 or 8 quarts of potatoes per day. Brother farmers, do not dispute me till you have tried it yourselves, for I know it to be so.—*Nor. Far.*

Effects of Electricity on Plants.—Many experiments in electrifying plants have been made by M. Nuneburg and the Abbe Nollet. According to the reports of the former, most of them increased in height, and flourished far beyond others not electrified. Some bulbous roots, he says, which had been frequently electrified, grew eighty-two lines and a half, whilst others of the same species, not electrified, grew only fifty-two lines and two-thirds. But the report of Abbe Nollet is not so favourable; he found that the plants electrified by him made vigorous shoots at first, but he thought the perspiration being, by these means, too much increased, their juices were too quickly dissipated.

Hence the plants became gradually weaker, and at length prematurely perished. We yield due credit to both these reports, though they seem, in some measure, incompatible with each other. It is possible the experiments were made on various plants, at different seasons.—*Hort. Reg.*

A cure for poisoned Sheep.—It is a fact well known to farmers, that sheep are frequently poisoned by eating common laurel, (kalmia latifolia.) When you suspect this to be the case, give the sick animal a strong tea made of mountain dittany, (cunila mariana,) moderately warm. This simple remedy has been known to recover sheep in the last stages of the disorder

It would be well for farmers whose cattle are in danger of being poisoned, to procure and dry a quantity of dittany in the summer, and keep it by them through the winter, as it is in the latter season they are most likely to be affected. It may also be useful in other disorders incident to cattle—so much for the cure—as a prevention, destroy all the laurel on your farms.—*Mackenzie.*

Feliciana Grass.—Mr. Alexander—Dear Sir,—I feel pleasure in informing you, for the information of the public, that grass resembling the gama grass in every respect, except the tassel or spikes, is found to be indigenuous to this parish—Mr. De Kemp, a practical planter, near Greensburg, the seat of justice of the parish, has it growing on his plantation, and has cured several hundred weight this year, for hay. On other plantations also, it has been observed the past summer.

The height of this newly discovered grass, and which (until I shall discover another name,) I shall call, by way of distinction, after our county, *Feliciana grass*, comes up early in the spring, about the close of February, or early in March, in a single bunch, but immediately, the root spreads and there will shoot straw, or stalks from a surface of from eight to twelve inches diameter. The leaves or blades, are upward of an inch wide, and some I have seen would measure three feet in height. The straw puts out leaves about five or six inches, and in some instances eight or ten inches apart. The tassel, or spike, is single, and unlike that of any other grass I have ever seen, resembling a broom in miniature, large in the centre and running to a point. The straw is as large as the stem of a white clay pipe at the bowl, and not harder than crab grass, when the seed is ripe. The taste of this straw when cured, resembles that of the leaf of the sugar-cane, nearer than any other vegetable I have tasted.

Mr. Kemp, who has observed of the *Feliciana grass* for the last four years, thinks it will bear cutting once in two months, or oftener, and bears the drought better than any grass with which he is acquainted. On a piece of ground which Mr. Kemp sowed in rice, which was killed by the severe drought of May, June and July, this sprung up in August, yielding an abundant crop.

Horses and cattle will leave well cured corn-blade, to feed on this delicious hay.

The late period at which my attention was called to the *Feliciana grass* has prevented my procuring the seed or examining it in its uncured state—but several planters with whom I have conversed, give it the same character which is given it by Mr. Kemp.

I would suggest the propriety to the State Agricultural Society, of procuring roots of this grass next spring, and testing its worth by fair experiment. It flourishes on any soil, delighting most in rich alluvial bottom.

J. M. Bradford.

Grapeland, Parish of St. Helena, Oct. 23, 1833.—Lou. Reg.

On the Flowering of Vines.—It is often observed that healthy and vigorous growing vines, even in favourable seasons, never produce any, or but very little fruit. This is sometimes occasioned by the plants producing only male flowers, and in these cases the anthers are sessile, or if the filaments are present the anthers are wanting. A second cause of this failure is when only

female organs are developed, which, however, are sometimes impregnated by insects with the pollen of other vines, and therefore produce berries only very sparingly. A third, and very prevalent cause is, when the calyx opens on the top and forms a basin, which retains water about the organs of impregnation, and thereby hinders them from performing their respective functions; all such plants should either be destroyed entirely, or grafted from a free bearing vine, that flowers perfectly.—*Gar. Mag.*

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Sore Throat.—We have known several in which this distressing complaint, even in its worst stage, has been immediately alleviated, and speedily cured, by the following simple remedy. Mix a pennyworth of pounded camphor with a wine glass full of brandy, pour a small quantity on a lump of sugar, and allow it to dissolve in the mouth every hour. The third or fourth generally enables the patient to swallow with ease.—*Newburyport Her.*

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To keep off or drive away Bed-bugs.—Make a strong decoction of red pepper, when ripe, and apply it with a common paint brush to the joints of the bedsteads, wainscoating, &c. where these odious insects usually resort, and it will speedily kill or expel them.—*N. E. Far.*

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To preserve Vines from Bugs, &c.—Glauber's salts, (sulphate of soda) an ounce dissolved in about one quart of water, and sprinkled on the plants or vines is recommended as a preventive against insects.—*Ib.*

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Hints to Housewives.—Do not wrap knives and forks in woollens. Wrap them in good strong paper. Steel is injured by lying in woollens.

Do not let coffee and tea stand in tin. Scald your wooden ware often; and keep your tin ware dry.

Barley straw is the best for beds; dry corn husks slit into shreds are far better than straw.

Straw beds are much better for being boxed at the sides; in the manner upholsterers prepare ticks for feathers.

Brass and irons should be cleaned, done up in papers and put in a dry place, during the summer season.

If you have a large family, it is well to keep white rags separate from coloured ones, and cotton separate from woollen; they bring a higher price. Paper brings a cent a pound, and if you have plenty of room it is well to save it. "A penny saved is a penny got."

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French Method of Making Mortar for Buildings.—The method used by the masons in some parts of France, is to put lime in a sort of a trough raised on four legs, about eighteen inches from the ground, and then to pour in sufficient water to slake the lime, adding, when properly slaked, more water, and stirring it until it is about the consistence of thin milk. At one end of the trough is a hole four inches square, covered with a wire grating, and closed with a wooden slide or shutter; when the lime has been rendered liquid as above, the shutter or slide is withdrawn, and the fluid runs out through the wire grating into a reservoir formed on the ground by the well sifted sand or drift, with which sand or drift the fluid lime is subsequently mixed to make the mortar. Is not this a cleaner way than our clumsy one of sifting the lime in the streets or roads through a coarse sieve, covering with a destructive white powder every thing near, and putting out the eyes of the passer by? It also makes a better mortar.—*Lon. Mec. Mag.*

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Coffee—Simple disinfecting substance.—Among the useful discoveries recently made, the new and easy way of clearing the air from offensive and injurious smells, and probably also of disinfecting contagious or miasmatic matter, deserves particular notice, especially at present. It is ascertained by facts, that in many instances, where, on account of a real or presumed contagious or

miasmatic infection, it has been resorted to, vapours of chloric acid, devoloped by chloride of lime, by sulphuric acid, table salt and manganese, &c., these vapours, or similar ones, proved not only to be of no avail, to destroy the offensive smell, but became frequently very injurious to children, and to individuals with weak lungs, with a disposition for blood spitting, asthma, &c. It is also obvious that a vapour which destroys the offensive smell in substituting it by another, which is agreeable and more congenial to us by our daily habit, would be preferable to any other. This new disinfecting substance is nothing but coffee. About twenty years ago, Dr. Weiss, from Freyberg, in Germany, published his interesting trials with the vapours developed from coffee when roasting. Many professional men engaged in large hospitals, and among the naturalists, the celebrated professor Lampadius, have confirmed these trials. Rooms filled with the most offensive vapours of animal and vegetable matter in a state of high putrefaction, or with the smell of the strongest spices, with assafœtida, and even with musk, which hitherto resisted almost all other disinfecting means, became gradually free from the offensive smell.

We would not recommend to neglect or to discontinue the use of chloride of lime, or the above named disinfecting vapours, first recommenced by the great French chemist, Guyton Morveau, in order to purify the air in open or confined places, where vegetable or animal matter entered in a state of putrefaction. In all probability these vapours act with more chemical intensity in destroying the miasma or contagion We direct only the attention of the public to the vapours of roasted coffee in cases where chloric fumigations are either not on hand, or might injure the respiratory organs, the eyes, &c. of delicate persons. They might also be worth recommending for disinfecting goods, which, coming from places suspected of contagious diseases, cannot stand well the chloric fumigations without becoming spoiled. Much more so, since modern experiments, especially those instituted by William Henry, (Annals of Philos. 1831, p. 363 369,) based upon the reports of Russel, (in his natural history of Aleppo,) have conclusively proved that chloric fumigations do not penetrate at all, even very small bales of cotton, twist, &c., not even letters, and that the only certain mode of disinfecting goods is, to expose them for three or more hours to a constant heat of at least 180 degrees of Fahr. The best manner to make fumigation with roasted coffee is to dry and pound the best Mocha coffee, as fine as possible, and to throw then about one half or one drachm of it, in small quantities, upon an iron flat saucer, heated by an alcohol lamp. Instead of coffee, one or two drops of the empyreamatic coffee acid, prepared by a chemist, according to the prescriptions of Ceenevix, Caysse, Glaft, and others would be sufficient for a large room. Those who wish to combine the disinfecting apparatus with economical advantages, and to have daily fresh roasted coffee—which is by far more tasteful and wholesome than coffee long roasted before it is used—could apply a small cylindrick coffee roaster, with some holes on both bottoms, wherein the coffee becomes roasted by turning over a vessel filled with burning alcohol.—*N. Y. Star.*

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The Phenakisticope.—Many of our readers have doubtless seen this curious instrument, invented by Professor Stamphe, of Vienna, and lately introduced into this country from Paris. It is so constructed that a series of figures painted on a revoling card and reflected by a looking glass, are made to present to the eye a variety of motions, which give the figures the appearance of life. It is not not only an amusing toy, but it serves to illustrate some principles of optics not very familiar, and well deserving of being understood. We are glad to learn that Mr. Josiah Loring, whose unrivalled globes we took occasion to notice lately, has undertaken to manufacture this little instrument. Those of his manufacture are in every respect equal to those which are imported from Paris, and he has furnished them with an additional card which serves to illustrate some of the principles on which the instrument is constructed. The optical illusion produced by the movement of these figures is very surprising, and affords a fund of amusement, not for children only, but for persons of a mature age.—*Boston Daily Adv.*